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Assisting the creation-process of fictional characters
with Large Language Models

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Abstract

With the advent of OpenAI's ChatGPT, text-generating technologies are spreading to every corner of our society, including the creative sector. This research explored whether a Large Language Model (GPT3) can assist a writer with the creation-process of fictional characters for novels and short stories. This resulted in the construction of a tool with two functionalities: i) generate a character outline, based on information provided by the user, in order to organise the thoughts of the user and help the user find connections between character aspects; and ii) a chatbot-like environment where the user can interact with the tool about a character's thoughts and actions. After several tests and evaluations, the tool did not yet seem to be developed enough to help meaningfully with the generation of a character outline. Yet the AI-powered chat interaction turned out to be a valuable concept, effectively opening up the possibility for writers to get to know their characters through and through. This is likely to improve the quality of the story they intend to write. On top of that, the general concept of simulating character interactions with LLMs has the potential to be translated to all kinds of other sectors. The research ends by reflecting on how the creative sector will always stay an exciting field for humans to express their thoughts and fantasies. A new perspective on the use of LLMs will only make us see the possibilities of our own creativity.

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Preface

The research was conducted under supervision of Max van Duijn, who is an assistant professor at Leiden University's Institute of Advanced Computer Science (LIACS) and the co-founder of the Creative Intelligence Lab. He brought knowledge on the use of AI technologies like LLMs, and on approaching academic research that involves the creative sector. The creation and writing process for characters and stories was a new area for him.

A meeting was held every two to four weeks, either online or on site in Van Duijn's office, to discuss the progress of the previous period and the plans for the upcoming period and meeting. Questions, notes and links were shared through mail and Notion, a note-taking web application developed by Notion Labs Inc. The research report was written and reviewed in Overleaf.

Chapter 1

Introduction

Every story revolves around at least one character. It is thus vital to make characters interesting and well developed. However, creating characters can be done in many ways, with all kinds of aspects that could be focused on. Every writer has a personal preference when it comes to creating characters. This research aimed to define two well-working approaches and explored through a tooling how Artificial Intelligence (AI) could be used to improve the creation process. The two approaches were as follows:

- Providing an organised and predefined way to outline characters.
- Making the characters feel alive to the writer, so there exists a warm transfer between the character-creation phase and the writing phase.

In 2022, researchers that wanted to create a prototype for a character backstory generation system, already recognised the rising popularity of AI, specifically with the release of *OpenAI*'s openly available *GPT-3* model (Brown et al., 2020). However, despite the exciting developments in the world of AI, they still chose algorithmic generation (Clark and Sood, 2022). In their research, they defined AI as “technologies and systems with a machine-learning component which seek to reduce or eliminate human-authoring”, in contrast to algorithmic generation where this human-authoring element is required. Their main argument for choosing algorithmic generation was that AI did not suit the working ethic of writers: writers like to have control over what they create, and AI could take parts of that control away.

Although their decision was well grounded, here it is argued that there is more to AI than taking over the creation process. This research therefore aims to discover good ways AI-technologies can be of assistance to the complexity of creating fictional characters, without taking away human authoring elements. Consequently, and since this research will mainly focus on Large Language Models (LLMs) like *GPT-3* from *OpenAI*, this results in a different definition for AI, which is partly based on the in 2018 updated definition of AI by the European Commission (ECAI, 2018): Artificial intelligence refers to systems with a machine-learning component that perceive and interpret a given input, that reason on the knowledge derived from this data and decide the best action(s) to take (according to pre-defined parameters) to produce an output that meets the needs of the human that provided the input. It has to be noted that this research is narrowed down to one type

of AI: LLMs. Therefore, the above definition is also applicable to the definition of LLMs (refer to Chapter 2 for a more detailed definition of LLMs).

1.1 The approaches to using AI for character creation

Concerning the ways to outline a character, professional writers and teachers always like to urge new writers to stick to the basics and the general best-practices, before they move on to their own style and methods. The internet and books are therefore full of explanations of rules, methods and writing exercises, but this can be overwhelming to new writers, especially when people say contradicting things or use vague terms. This is why only one method to outlining characters would be constructed for this research.

Another problem that many writers face is fatigue, due to the difficulty of putting their thoughts into words or even organising those thoughts. This becomes even worse when the creation of the characters is finished, but the writer does not use the produced outlines to their fullest potential once they start writing.

Based on the idea that LLMs should reduce human authoring as little as possible in this research, the LLMs were prevented as much as possible to suggest ideas for characters on their own. Instead, they would base their generated output as much on the given input as possible. The focus thus lied in assisting the writer, instead of replacing the writer. The LLMs were used to simplify and improve the creation process, without replacing, predicting or influencing the author's ideas.

Based on these problems that many writers face, the two aforementioned approaches were thus defined, and the research aimed to assist and/or improve these approaches.

1.2 Research setup and evaluation

To have an environment in which these purposes can be realised, visualised and tested, a Graphical User Interface (GUI) was created with the *PyQt5*-package, which will be referred to in this research as “the tooling”.

Because I am a writer myself, and because I already possessed a fair amount of knowledge on the topic of character creation, I based most of the assumptions, assessments and decisions regarding the preferences of (aspiring) writers, on my own views. This means that my personal expertise in creating characters was part of the foundation of this research. To work towards a list of criteria for the tooling, I selected methods and approaches from related work, based on what I found most suitable and effective for the purposes of the tooling. Once the tooling was complete, I subjected it to a structured analysis, outlined in the Methods and reported in the Results chapter.

Since my knowledge was mainly focused on writing novels, the research also focused on the creation of fictional characters in fiction novels. However, character creation is not too different for other forms of art, like theater plays, movies, tv shows, games, poems, etc., so the takeaways from this research are useful for those other forms of art as well. Although genre also might have influenced

the kind of characters that would get created, many writers support the ideas of pushing the boundaries of genres, mixing genres or exploiting the stereotypes of a genre to catch readers off guard. Therefore the assumption was made that writers could and should design their characters however they like, regardless of the genre.

This all led to the following research question:

How can Large Language Models assist the creation-process of fictional characters for fictional novels, in order to improve the quality of what creative writers produce?

The rest of this thesis is structured as follows. In Chapter 2 existing work will be discussed. Chapter 3 describes the methods used to answer the research question. Chapter 4 covers the results of all the different tests that were done on the tooling. Chapter 5 discusses the results, possible biases and future work. Chapter 6 contains the conclusion. At the end, all references and appendices can be found.

Chapter 2

Related work

Since this thesis aimed to combine Large Language Models (LLMs) and creative writing, it was important to know the exact meaning and scope of this specific type of AI. LLMs are language models that are trained with many parameters on an enormous amount of unlabeled, raw text data. The result is a model that can “learn” how humans generally utilize and structure language, in order to generate, summarize and predict new content. One of these Large Language Models is *text-davinci-003*, created by *openai*. This model uses training data from up to June 2021 and is an instruction-tuned version of the base model *davinci*, that uses 175 billion parameters. The instruction-tuning element of the *text-davinci-003*-model results in answers that are more to the point and better suited for interactions. More information on this can be found in the introduction paper of *GPT-3* (Brown et al., 2020). Because of these characteristics, the *text-davinci-003*-model looks suited for this research.

There are three main sources of information from where knowledge could be extracted:

- **The writing community**, including bloggers, video essayists, podcasters, teachers, etc. In general this group talks about general rules, good methods and best practices in the writing community that they know from experience.
- **Commercial companies** that provide products to assist in the creation process. They usually attempt to combine the knowledge from the writing community with AI technologies.
- **Scholarly research** that looks at creativity and character creation from an academic point of view, which usually results in a framework or experiment.

The writing community in itself already contains an enormous variety of approaches to the character creation process, and one opinion usually does not rule out another. It is however fair to assume that experienced writers are able to create more interesting and compelling characters than non-writers. This assumption is also supported by research (Maslej et al., 2017). Selecting, combining and altering the approaches of experienced writers is therefore a viable option in order to shape two good approaches for new writers to hold on to.

2.1 Identifying the aspects of characters in stories

To identify the key concepts of character creation, the importance of characters in novels should be defined first. According to (Haven, 1999) characters are the focal point of any story, event and scene. They drive the story forward and, if the character is fleshed out enough, they can make a plot feel alive. Characters are after all the ones that experience everything that happens in the story, and they are also the ones that make things happen. To make a story interesting for readers though, the character also would need some flaws that the writer then can exploit. Haven also argues that a fully fleshed out set of characters will write the plot by themselves. The obstacles that a character faces to get from beginning to end are based on problems and struggles, both externally and internally. Those struggles find their roots in the flaws and desires of the characters, and the interactions and relations between characters.

There are many blogs about these “principles”, but the step of defining the desires of a character is by far one of the most commonly discussed topics. September C. Fawkes (Fawkes, 2021) is one of many that talk about this specific element of character creation, and it is a rule of thumb that most people agree on: “want versus need”. The “want” depicts what the character desires at the start of the novel, or what it thinks it needs in order to achieve its goal, but usually this is a false assumption. The “need” is therefore what the character actually needs in order to achieve its goal. This way the character will go through a change. It will chase its “want”, and by encountering certain obstacles, it learns and progresses until it realises that the “need” was the actual goal all along. This so-called “character arc” will make readers care more about the story and the journey that the character goes through, and at the end it will provide a cathartic moment that seals the story nicely. This is not the only kind of character arc, but “want vs need” is the most used one. Another way to describe this method is “external goal vs internal goal” or “initial goal vs realisation of the actual goal”. An example is a romance novel, where the initial goal of the main character is to find their true love, which they chase by asking out someone they know, meeting people online, attending workshops and speed dating events, but throughout the novel they learn that the reason they wanted to have a partner is because they felt lonely and not being loved, leading to the actual goal: realising that they are not lonely and that they are being loved already, because they have their friends and family. The novel could then end with the character spending more time with those people and appreciate what they do have in life, instead of what they do not.

A good way to identify all the aspects, is to look at how characters are picked apart when people analyse a story. A good analysis form is suggested by Ace Study Guides (Ace Study Guides, 2020), consisting of eight aspects:

- **Role of the character**, describing how important the character is in the story and in what way they are important. A few given options to describe the role are dynamic, static, minor, major, foil and symbolic. A character can have multiple of these descriptions. The writer could also describe the character’s role in society here.
- **Motivation**, describing what drives their decisions in the story, which correlates with the goals, hopes and dreams of the character. This aspect also explores the moral compass and opinions that the character stands by.

- **Actions**, describing how the character’s motivation shapes their world. This aspect explores how a character behaves, in what mood it is in certain situations, how their actions impact other characters and if there is an inner conflict that the character struggles with throughout the story.
- **Character traits**, describing the personality, strengths, weaknesses and flaws of the character, and also the way the personality might change throughout the story, if it even changes.
- **Relationships**, describing family, friends, acquaintances and enemies, while answering four questions:
 - How does the character view others?
 - How does the character interact with others?
 - How do others view the character?
 - How does society view the character?
- **Development**, describing, similar to character traits, how the character changes throughout the story, but this aspect focuses on change in a broader way, where events are also connected to that change.
- **Dialogue**, describing how the character speaks and how they convey emotions or desires through speech or body language. This aspect also relies on character information like ethnicity, nationality/dialect, age and friend group.
- **Author intention**, describing what the author tries to communicate with the character, which usually boils down to the theme and message of the story.

It is noteworthy that almost all aspects refer back to and correlate to the role and motivation of the character. Another important note is that the entire story is already created in this character analysis scenario. For example, development connects events to the change, but this might be difficult when the story only consists of characters yet. There are also aspects that correlate much with each other, or should be described before other aspects. Therefore these eight aspects could be trimmed down and combined to six aspects for an approach to *create* a character:

- **Intention**, describing the themes and message of the story and describing the role of that character in the story. This thus combines the initial aspects “Author intention” and “Role of the character”. The role of the character will also define the take of the character on the central question in the story.
- **Development**, describing how the character changes throughout the story, in order to convey the message and themes. This might also change their take on the central question.
- **Character traits**, which keeps the initial aspect “Character traits” from the character analysis.
- **Motivation**, which keeps the initial aspect “Motivation” from the character analysis.

- **Environment**, describing the impact of the motivation and character traits on the world around them. This aspect combines the initial aspects “Actions” and “Relationships”.
- **Voice**, which keeps the initial aspect “Dialogue” from the character analysis.

The question remains if these aspects are sufficient, or even explore too much. In his novel *The Empty Space* (Brook, 2008) Peter Brook explains how, in theater, he tries to get actors to their best potential, by ignoring redundant details and only focusing on the core of the story: “when [the actor] understands precisely what is demanded of him, what he must fulfill, then he can properly understand his role. When he sees himself in relation to the wholeness of the play he will see that not only is too much characterizing often opposed to the play’s needs but also that many unnecessary characteristics can actually work against him and make his own appearance less striking.” Brooks ideas on creating stories are cited everywhere, which not only comes from his level of experience, but also from the essence of theater: it is probably nowhere as important as in theater plays to have good characters the audience can understand, sympathize and care about.

To further support the theory of Brook that “less is more”, the game *Dungeons and Dragons* contained a similar approach. The popularity of the well-known game can be assigned to a number of reasons, but one major reason is that the players have creative freedom over the world and their characters. Creating a character is an important step in the game. From either a sheet or an extensive guide, the player must fill in all sorts of details on its character (*D&D Beyond*, nd): alignment (norms and values that drive the characters decisions), ideals, bonds (with people, places, objects, etc.), flaws, background and abilities. Notice however that the game only forces players to think about the inside of their characters, and all abilities and outside features or possessions are limited to the essential things that the player might need in situations. The game developers chose to focus on the absolute necessary, to make them feel as alive and interesting as possible, while still leaving room for the players to fill in the details in their mind or along the way of the games they play. If a player would want to give their character a specific eye color or scar, they would have to add this themselves. The game developers knew that too much descriptive information would only limit the imagination of the player. Most details will be forgotten if there are too many. Focusing on the core of the character thus stimulates the imagination and liveliness of the character.

Based on these two sources and my own expertise, these six character aspects seem to provide a good foundation to an approach to character creation. The aspects leave out descriptive details like the character’s appearance and focus instead on the role of the character in the story and the (reasons behind) their personality, behaviour, opinions, relationships and ways of speaking. These are all aspects I would label as vital for an actor in a theater play, for a character in a game of *Dungeons and Dragons*, and for a fictional character in a novel.

2.2 Learning from the ways commercial companies combine writing rules with AI

The knowledge from the writing community can now be used to analyse currently existing software from commercial companies, that seek to combine the creation process with AI as well. Currently, most of the companies that operate in this specific market are startups. Because the creation of

characters is only a fraction of the entire writing process, it is usually just a feature of bigger systems.

The AI Author is one of these companies. Their approach to using AI for character creation is to first let the writer give a description of one character they have in mind, and then run some predefined questions as input in the software using GPT-3 (Rollins, 2021). The AI is based on some approaches from the internet to create a single character, so the approach of Truby is not present, and it also uses the initial description as a reference to answer the predefined questions. Examples of questions are “What does the character want?”, “What does the character need?” and “What does his day-to-day look like?”. These are all pretty simple and basic questions, and the software also allows the writer to ask deeper questions or to finish a description, like “An important childhood memory that the character likes to think back to from time to time is”. This software is therefore a pretty basic implementation of GPT-3, and does not provide a unique user interface. It is more like a command prompt that leaves the writer with many generated answers to questions asked to the AI system.

Another commercial company is Inworld (Inworld, nd), which focuses solely on the creation of characters and is similar to the approach of The AI Author. Their software is however not a simple command prompt, but hides these questions about the character behind a user interface that makes the product look more user friendly. Their approach to creating characters is also to create every character separately. The only way it makes characters connect to the theme and define their interactions with one another is by answering these questions.

Another approach to creating characters can be found in the product of Subtxt (Subtxt, nd). In their software there are three types of storylines recognised, and all result in a different approach to creating characters. For example, if it concerns a character that changes and succeeds at the end, the core of the plot will be the problem that the main character faces. The user can then choose from a list of predefined options that will be the kind of problem that is centralized in the story. This does not necessarily mean however that their software can only produce stories with one main character. They recognize characters as a purpose to a higher meaning, which is the theme of the story. Multiple characters can have a character arc, but all arcs should be connected to the theme and the message the author tries to convey. In this approach, Subtxt does not really focus on the details of the characters and likes to pay much attention to the layout of the character arc(s) and the relation of different characters to the plot. The user can fill in much stuff about the storylines and characters connected to those storylines through a nice looking user interface, but also noticeable is how every step in the creation process needs much explanation. This is due to the complex nature of the approach. The AI-model might create a very accurate character description and plot summary, but this comes mostly from the extensive outline that the user must fill in step by step. AI therefore seems like a small part of the software. An interesting feature to the software is how AI can help with brainstorming: the user can set and change their preference on how much the AI-model does random or accurate suggestions. If this setting is set to 0, the AI-model will not do suggestions. The user can also change what the AI-model has written, so the creative freedom is never in the hands of the AI-model.

In conclusion, the experimentation with LLMs did not push real boundaries yet when it comes to writing software. The main feature of LLMs (text generation), is simply shelled with a user interface

and connected with some writing principles. It is also noticeable how these software packages do suggestions and take over the creation process, which is exactly the approach to assist writers that is excluded from this research. The purposes for the tooling could therefore lead to new insights on how to use LLMs to assist writers and on the possibilities of LLMs in general.

A positive takeaway from the commercial companies is that the way to develop the character, is to go through a series of questions, and then let the LLM generate a certain output, whether that be a suggestion or a summary. When looking back at the six aspects, one character creation approach could thus consist of a set of questions that deal with all aspects one by one. After every question is answered, a character summary or aspect summary can be generation, based on the answers given by the writer.

2.3 The approach of a character web

Although sequencing the aspects sounds like a good approach already, creating one character at a time can be inefficient and also harm the coherent nature that a story could have. John Truby therefore suggests a different approach, which he explains in his novel on writing: “The anatomy of story” (Truby, 2008). Instead of creating one character at a time, he argues that all characters should be created at the same time, by making them part of an interconnected web. The differences and similarities between the characters will mainly be defined by their relation to the message and theme of the story and their take on the central question. This way all characters can be plotted on different areas of a spectrum, which improves the identities of the characters and the coherency of the story. An example given by the YouTube channel Just Write is the movie Batman Begins (Just Write, 2017). In this video essay, Just Write explains how every villain and important side character has a different take on the main theme: fear. All characters use fear with different motivations, and against different targets. According to Truby, this approach automatically creates all the main conflicts necessary to build the plot. His approach defines five steps:

- Distinguishing all characters by giving them all a function in the story. According to Truby, every character should serve a purpose in the story. This will lead to a web of all the important characters.
- Comparing each character to the theme. Give them all a different take on the central question in the story, and give them a motivation for this take.
- Concentrating on the hero by defining all different aspects that could be relevant about the character. This could be job, memories, looks, flaws, fears, passions, etc.
- Concentrating on the opponent in detail, which is the most important character after the hero. The opponent is usually the character that challenges the hero’s view on the central conflict the most. This forces the hero to rethink their own beliefs, which could lead to a change.
- Define the other characters and create a plot from this web by building conflict based on interactions between the hero and the other characters.

Truby's approach looks promising, even more so because of his level of expertise as a screenwriter and writing teacher. This approach would also work very well with the character aspects, since the steps where each character is created individually, can be done so by focusing on these aspects.

2.4 The approach of an AI-powered interaction

A very fresh and potentially interesting approach is opted by the English teacher Angela Fitchett (Fitchett, 2017), and although it focuses on teaching students to create believable characters, the end result is the same: well-developed characters. Fitchett's writing activity does not focus on the actual character someone wants to create, but attempts to broaden the mind and encourage creativity before a student actually creates its own character. The activity entails that one chooses a clothing button from a set range of different buttons and then describes the garment that this button would be attached to, focusing on all kinds of features about this piece of clothing. After that, the students have time to interact with each other, so even more questions about the life of that button and garment will be answered. From that stage, the activity moves on from the garment to the person that would wear that garment. Once again, the students are tasked with working out the person they have in mind in detail. They do this both by themselves and through interaction. At the end, the students will compare their characters with one another, especially when they appear somewhat similar.

For a character creation approach, this could be used in a number of ways. The activity could be implemented as it is now, while replacing the interactive parts with a conversation between the AI and the writer. This could be implemented as an optional step in the tooling, before the user moves on to creating their own character.

Another implementation could be an interactive feature where the user has already created a character. In this scenario, the AI will attempt to create a character similar to the one of the user, or embody another character from the character web created by the user. The user will then be able to interact and point out what the differences and similarities are between its own character and the AI's, which is a process that the user can repeat as much as they like. This second way of interaction is useful in a number of ways. Not only does it improve the educational aspect of the tooling, but it also will help the user with getting to know its character to the bone. The user will see their character in so many new lights, that the character feels alive. When the user moves on to the remaining parts of the outlining phase, or the actual writing phase, it will be in a much better state to write about that character or set of characters, improving overall story quality. The better the user knows the characters in the end, the better the user will be able to put an interesting character on paper that will feel alive to readers as well.

This way of using an AI-powered interactive feature makes much improvement to the warm transfer between the outlining phase and the writing phase.

Chapter 3

Methods

As a first step towards addressing the research question — how can Large Language Models assist the creation-process of fictional characters for fictional novels, in order to improve the quality of what creative writers produce? —, related work was reviewed from three sources: the writing community, commercial companies and academic research. These first two sources were included, because solely academic research would provide too much one-dimensional, theoretic knowledge on a subject that revolves around human creation. The expertise of professional writers and writing teachers, along with knowledge extracted from existing (AI-powered) writing-assisting software, connected well with the creativity and AI elements that form the basis of this research.

3.1 The constructed approaches to creating characters

To construct the approaches that would be the driving force of the tooling, a combination of methods from the related work was used, since these methods came from experts in their respective fields. Based on what seemed to be good approaches for the tooling, Truby’s method of a character web was selected as the basis. The step where he develops each character one by one, was shaped through a questionnaire that would go through all the six aspects defined in Section 2.1, because these aspects seemed to cover all the important information on characters that is needed to write an interesting, engaging character or play such a character on stage. Because this research was focused on AI, the questionnaire would use a LLM to generate a character summary based on the input provided by the user. The user would then be able to create their set of characters one by one by repeating the process.

To also include the purpose of the tooling to provide a warm transfer between the character creation process and later steps in the creation and writing process, the AI-powered interaction from Section 2.4 was added as a second approach. This interaction would also have the potential to shed new light on the way LLMs can be used, namely as a way to recreate teaching exercises, and as a way to take a look inside the mind of a character.

3.2 Criteria for the tooling

When these newly constructed approaches were ready as a concept, the approaches were then deconstructed to define all the specifics for the tooling. The first approach could be split into two elements: a character web and a questionnaire. The second approach was the AI-powered interaction. To limit the complexity of building the tooling, the element of a character web was excluded from the tooling. This resulted in a smaller project and therefore a better focus on the research question.

It was decided to split the questionnaire from the interaction-part. To go to the interaction-part, the user would first have to make at least two characters with the questionnaire-part.

3.2.1 The questionnaire

The questions for the questionnaire were then defined per aspect. The choice to define the questions beforehand, instead of generating them with a LLM, or through another method, was that predefined questions would make for a questionnaire that was easy to understand, build and control.

To make sure that new writers would learn to recognise and use connections between aspects (for example: their opinion on the central topic is partly based on personality and moral compass), the questionnaire would also have to show previously given answers that are relevant to the current question the user is answering.

The predefined questions are presented in Table 3.1.

Once the user has gone through all questions, a LLM would generate a character outline based on the provided answers. The user would then be able to finish the character by giving it a name. After that, the tooling would return to the main menu from where a new character could be created or, if two were already made, an AI-powered interaction could be started.

3.2.2 The AI-powered interaction

The final step in formulating the tooling criteria, was defining the element of an AI-powered interaction. The choice was made to have a window where the user can select two characters: one that they will embody themselves, and one that a LLM will embody. The interaction-part would then consist of three predefined questions that the user and LLM could answer, in order to think about the differences and similarities between the two characters, which would result in deeper insights into the unique identity of the characters. The choice for only three predefined questions was that it would enable more standardized tests, where results could be compared based on different answers on the same questions. Another reason for this choice was that it would be in line with the principle to stick with the core information, and stay away from defining too many details. Although the process of getting to know a character could take much longer than three questions, adding more questions was not deemed to be necessary in order to test this interaction-concept. The predefined questions were as follows:

- How does your character’s opinion differ from my character’s opinion, concerning the question ‘How should you deal with fear?’?

aspect	question
intention	What is the role of the character in the story?
intention	How important is the character to the story?
development	Is there a central theme, conflict or question in the story, and if so, what is the character's perspective on it?
development	What is the main goal of the character at the start of the story?
development	What does the character realise about this goal, or what does the character learn about its own beliefs at the end of the story?
character traits	How extrovert, sociable, outgoing, and energetic is the character?
character traits	How agreeable and flexible is the character, and how well does it get along with others?
character traits	How careful, zealous, organised and disciplined is the character?
character traits	How emotionally stable, confident and stress-resistant is the character?
character traits	How imaginative, creative, unconventional and curious is the character?
character traits	What are the strengths of the character?
character traits	What are the weaknesses and flaws of the character?
motivation	What are the general goals, hopes and dreams of the character?
motivation	What are the character's interests and hobbies?
motivation	What are the character's disinterests?
motivation	What does the character value?
environment	How does the character think that others view it?
environment	Does the character struggle with an inner conflict (for example: insecurity), and if so, what conflict?
environment	How does society view the character?
voice	What influences the ways that the character expresses itself verbally and non-verbally? (for example: friendgroup, nationality, dialect)
voice	How does the character express itself verbally?
voice	How does the character express itself non-verbally?

Table 3.1: The predefined question for the questionnaire.

- How does your character view my character?
- How does your character interact with my character? (commenting on dialogue, body language, subtext, energy, sarcasm, directness, etc.)

After this interaction, the user would return to the main menu again, from where new characters could be created or a new interaction could be started.

3.3 Building the tooling

The tooling was created in PyCharm (version 2020.3.3), with the following packages:

- numpy
- os

- json
- pandas
- sys
- PyQt5
- openai

Firstly, a CSV file was created for the questionnaire, to make the predefined questions and related extra information easy to access. This file could then easily be integrated in the code with the *pandas* package. The CSV file can be found in Appendix C.

To then build the interface for the tooling, the package *PyQt5* was used. Both the *pandas* and *PyQt5* package were chosen because of existing experience with them.

For each window type in the GUI, a class was created, which also matched the key elements of the tooling:

- A **homescreen** class, which sets up a window from where each previously created character can be accessed, and from where a new character can be created.
- A **questionnaire** class, which sets up a window with a question from the CSV file and a format through which an answer can be given and stored. When the answer is submitted, the class will analyse the progress with the created character, and then decides what class should be called to open a new window. Most of the time this next window contains the next question from the CSV file. The class will thus recall itself until all the necessary information is gathered.
- A character summary will then be generated with the *text-davinci-003* model from the *openai* package.
- The final window of the questionnaire will display the output, generated with the *text-davinci-003* model, and make the user assign a name to the completed character.
- Because a completed character did not mean that the best potential was reached with the character, a next class was created to embody the tooling-element of an AI-powered interaction. Once the character name is submitted, the summary and name are stored, and the GUI moves on to this **interaction** class. Here, the user is given the option to answer three questions about its character, and to ask the same questions to the *text-davinci-003* model from the *openai* package, with the purpose of getting to know the character by being put in their shoes. The interaction class works by the same concept as the questionnaire: the class recalls itself to open a new window for the next question.
- Once the three questions are dealt with, the GUI will return to the homescreen class again, and consequently open a window in which the newly created character is displayed in the menu alongside the others.

- In order to store progress when the tooling is closed, the *json* package was used. A txt-file would be created with the first run, in which a dictionary with the created character outlines would be stored and updated every time a new character was created.

The entire code can be found in Appendix D.

3.4 Iterative testing and developing

With the first version of the tooling completed, the research moved on to the phase of repeated testing and developing. In this phase, characters were created with the tooling, to try and find things that still needed some tweaking. To standardize this testing method, separate types of experiments were set up, so different aspects would be highlighted. The following experiment-aspects were tested:

- Generated character outlines
- AI-powered interaction effectiveness

The tests for the generated character outlines were a simple process where a different set of answers was given for every test in the questionnaire. Anything noticeable was documented and improved, if needed and possible.

To make sure the LLM gave a compact, coherent output back, solely based on the ideas of the user, instead of adding new information that was never implied, the number of max tokens was set high, and the command itself contained a specific instruction to make the output as short as possible. This decision was based on ideas from the introduction paper of *GPT-3* (Brown et al., 2020). Furthermore, the command contained simple terms to describe the desired outcome — description, fictional character —, because those terms deemed to be interpreted better by the LLM than terms like "character outline" or "character summary". However, this was solely based on the idea that those other terms would imply another type of character description. For example, a summary would imply that the questions and answers needed to be summarized. Instead, the desired outcome would be a description where connections were made between pieces of information, and the text would be more fluently written.

The following hyperparameters were given with every test:

- **prompt:** In order to feed the answers to the LLM, this parameter was set to "prompt_command".
- **max_tokens:** The max_tokens parameter was set to 1500.
- **temperature:** To minimize the random element in the LLM functioning, the temperature was set to 0.

The tests for the interaction-part were of the same nature, but had a different setup. The hyperparameters were as follows:

- **prompt:** In order to feed the question and the character summaries to the LLM, this parameter was set to "prompt_command".

- **max_tokens:** The max_tokens parameter was set to 500, because an answer to a question does not have to be more than that. Simplicity is key. If more depth is needed, more questions are needed, instead of longer answers.
- **temperature:** To minimize the random element in the LLM functioning, the temperature was set to 0.

In order to analyse the effect of different kinds of character summaries, a set of diverse character summaries was predefined, and selected in different pairs to see how it would influence the LLM answers in the interaction. The six character summaries contained:

- Two one-sentence summaries about Mario and Peach, which were created by hand.
- Two long, coherent, high quality character analyses from a study guide book dedicated to the novel *The Great Gatsby*, by F. Scott Fitzgerald (Fitzgerald, 1925; Maurer, 2000). The analyses are on the main characters of the novel: Nick Carraway and Jay Gatsby.
- Two character summaries generated by the LLM of the tooling, where the questions were answered with the characters of Batman and The Joker in mind. These summaries are incoherent, but they cover information on all the important aspects for a complete and interesting character.
- Two character summaries generated by the LLM of the tooling, where the questions were answered randomly, resulting in characters that are not based on any existing fictional character.

The predefined character descriptions can be found in Appendix A.

The LLM model was given the following command for every test:

“If you would be a fictional character with the description ‘character description of the character that the AI will embody’ and you compare yourself with another character with the description ‘character description of the character that the user will embody’, how would you answer the question ‘question?’

The question variable that this command contains, selects one of the three predefined questions that were defined in Subsection 3.2.2.

Every test then simply contained two of the predefined characters, and were evaluated based on the answer that the LLM gave to the selected question. The evaluations specifically focused on the effect that the interaction-environment had on me, as the writer in the scenario. Reflections for every test were based on how much the concept of the AI-powered character interaction helped to understand the characters better.

Chapter 4

Results

This chapter describes the results from the different tests that were run with the tooling.

4.1 Generated character outlines

The first test was done with the following command:

*“Generate a description of a fictional character, based on the following information:
[loop over all the answered questions] The answer to the question ‘{question}’ is ‘{answer}’.”*

The generated outputs showed how the LLM also generated a name for the character, even though this should not have been given. This is partly caused by the fact that it was not specified in the command to exclude a character name, but another perspective on it was that the LLM generated random output when certain information was not provided (like a name or personality). This should not happen, since this research is aimed at assisting, and not replacing. In order to fix this, and simply get a shorter output if little input is provided, the command was altered and now specified that the generated output should be as short as possible and should not add information that is not already given.

*“Generate a description of a fictional character with no name. Make the description as short as possible, and do not add any new information besides the following information:
[loop over all the answered questions] The answer to the question ‘{question}’ is ‘{answer}’.”*

This command resulted in much better character summaries. This time around, no name was generated and the description was also much shorter. The LLM simply used the first answer (“protagonist”) to refer to the character. However, there was still some new information generated, even when no other questions were answered besides the first, mandatory one.

Because of the current potential and limitations of the OpenAI package, it seemed that it was not possible, or very hard, to prevent the LLM from adding information. The LLM was not solely based on the input, but also on the internet, and on the internet it saw what character descriptions generally look like. This would thus be something to accept and work around by making the questions mandatory to answer.

The flip side to this coin however, was that other tests, where all the questions were answered properly, resulted in an output that was too faithful to the provided answers. The description simply summed all the answers in a non-fluent manner, which is once again not desired. The LLM may not have added new information (because the needed minimum of information was already specified in the input), but now it did not show a well written, strong analysis on the character.

This was probably caused by the temperature value being 0, because it would prevent the LLM from writing the provided information too differently. Tests where the temperature was set to 0.8 already showed a much more coherent, useful and desired character description, while staying true to the answers that were given. No new information was added. However, it still felt a bit like a summary.

A test where the temperature was set even higher, and where the questions were answered with the character of Batman in mind, resulted in a very long output where the LLM recognises the character as being Bruce Wayne, and also uses that name in the description. After generating a summary not much different from the test with a temperature of 0.8, it produced a very long string of random words without punctuation marks. Once again the command was changed:

“Write a coherent, in depth character outline about one not-yet-existing character with no name. Make the summary as short as possible, and only write about the following information: [loop over all the answered questions] The answer to the question ‘{question}’ is ‘{answer}’.”

With the temperature also changed back to 0.8, the output looked more like the desired output again. When the questions were yet again answered with the character of Batman in mind, the summary was still all over the place, and incoherent, but a good thing was that it did not recognise the character as Bruce Wayne, nor did it add new information. The output was as follows:

“This character is a somewhat careful, zealous, organized, and disciplined protagonist (main character) who is somewhat emotionally stable, confident and stress resistant, but not very extravert, sociable, outgoing or energetic. His interests are chess and he disinterests are parties. His values are integrity, responsibility, and self-discipline. The central theme, conflict or question in the story is fear and the characters perspective is that it should be used to fight crime. His main goal at the start of the story is to stop The Joker from bringing chaos to Gotham City. At the end of the story he realizes that he must give up his personal life and his love for Rachel in order to defeat The Joker. The character struggles with an inner conflict, haunted by his past and viewed by society as a criminal. His general goal, hopes and dreams are to live a good life with Rachel. He expresses himself verbally with a low voice, influenced by his enemies, his past and Gotham City. He believes that others view him as a hero.”

The use of the term “outline” did not seem to change much about the coherence of the output, except for a text structure with paragraphs, and phrasing the command differently also did not result in a text that uses other words than those used in the command, questions and answers. The desired output would be a more independent character outline, where the LLM seemed to understand the effect of certain answers on the character as a whole, but that did not add new information that was not already implied by the input. Instead, the LLM now simply repeated the

answers sequentially in a different order and with a few new words. However, tests where questions were answered randomly showed that the LLM was capable of finding connections between answers and in some cases actually write a short, coherent character summary. It thus seemed that the way questions were answered, had quite an impact on the output.

4.2 AI-powered interaction effectiveness

The tests where a LLM model was used to simulate some kind of interaction with the user showed that this was a way more fitting utilization of AI, with the goal of improving the character creation process.

The character descriptions can be found in Appendix A and answers given by the LLM in Appendix B.

When the descriptions of Nick and Gatsby were paired for the interaction, with the AI embodying Nick, the answers given by the LLM were of very good quality and really helped to pick apart their extensive character descriptions. The answers went in on enough detail to make the characters feel alive and to get to know them thoroughly. When the user would be able to ask their own questions, instead of the three predefined questions, this would definitely help writers in many ways. Another interesting result, is that the answers are very different when the roles are switched, where the AI-model embodies Gatsby and the user embodies Nick. In both scenarios, the AI-model gives a very extensive and useful answer, and both result in new perspectives on the characters.

When the descriptions of Mario and Peach were paired both ways, the answers included totally new information that was never even implied with the — in these scenarios short — character descriptions. So just like with the generation of character descriptions, the amount of information from the input influenced the amount of newly generated information. Of course there was a grey line, because one could argue that some newly added information may indeed be implied by the character description, as long as the description is picked apart and interpreted in certain ways.

Besides those points, the adding of “not-implied” information is less harmful in this specific environment, than for example in an environment where a character description needs to meet the desires of the user. With the interaction-part of the tooling, more freedom is allowed to the LLM. The main goal is to make the user think about its characters in new ways, so if the user disagrees with a generated answer, the user has still thought about and sorted out a new aspect of their characters.

When the character descriptions generated with the tooling (Batman, The Joker, John, Mary) were paired, the answers that the LLM generated were pretty standard and similar in structure and word use, but also suited the characters well enough to comment on the uniqueness of these characters. A probable cause for this, was that all the important character information was secured through the aspect-questions from the CSV file, which resulted in a good fundamental character description.

One final observation from these tests was that the LLM seemed to follow the same structures to answer questions. The sentences contained similar words and build ups, and if the LLM needed to

answer a question for which it lacked information from the character descriptions, it would usually use the same or a similar phrase to answer the question. For example, with the first predefined question, asking how the characters each deal with fear, when the pairs concerned the smaller character descriptions like Mario, Peach, John and Mary, the LLM said that the character believes fear should be faced head-on. When it concerned the pairs for Batman, The Joker, Nick or Gatsby, the question about fear was a more suitable one to ask, and the generated answer was also more unique and fitting to the characters in question.

Some of the tests resulted in a generated output where the answer, a phrase or a sentence, was repeated multiple times, which could be caused by the quality of the *openai* package, but it is hard to find the real cause of this.

Chapter 5

Discussion

In this chapter, the results of the different tests are analysed and interpreted, along with notes on biases and potential further research.

5.1 Findings

The results of the character summary tests implied that the *text-davinci-003* model from the *openai* package is probably not up to the task of creating an extensive, interesting, coherent and in-depth character outline like one could find on the internet. Once the future brings more advanced LLM (or other AI) technologies, this situation might improve, but it seemed that it is not the ideal route for a creative writer to create characters this way. However, the first predefined approach to creating characters was indeed helpful to create interesting characters, because it made users think in a more organised and focused manner. Another thing to note is that the LLM-generated character outlines could be considered of enough quality when the user would only desire a simple, short outline that tells the provided answers in a more structured, logical and summarized manner. From this perspective, the use of an LLM to create character outlines managed to fulfill the tooling purpose of organising a writer's thoughts.

The results of the chat-bot/interaction tests showed that a LLM was able to connect small pieces of information from the character descriptions together, in order to give interesting answers that would make the user also connect certain dots that it may not have thought of before. The answers made the user think about their characters, and helped to get to know them thoroughly. Using AI to simulate such a writing exercise thus seemed useful and effective.

5.2 Limitations

The research was limited by a few points, influencing these findings.

First off, the choice was made to focus on two approaches to creating characters, which fitted the objective to create a tooling that would visualize those approaches. This however also meant that other methods were not taken into account, even though they could have influenced the generated character outlines, and consequently also the answers generated in the AI-powered interaction.

A limitation related to the first approach was the concept of a CSV file that would contain all questions for the questionnaire, along with some extra features. Since these questions had by far the biggest influence on the input command that resulted in the generated character outlines, there is a high chance that these questions were biased. Although they were based on existing work, they were still human-created and influenced by my own knowledge of creative writing and LLMs. The same goes for the three predefined questions that were used for the AI-powered interaction.

Furthermore, the tooling itself was limited in terms of design, complexity and effectiveness, since the code depended on P.J. van der Zon’s programming abilities, and related to that also on the choice to use the *PyQt5*-package to create a GUI. This also had an impact on the generated content of the LLMs, especially because the input commands were based on what was believed to get the best objective results, meeting the desired outcomes as described in the Results chapter.

Another limitation was the used model from *OpenAI*. Even though the technology of LLMs already existed for some time, it was still never near at its highest potential. Therefore, this thesis was limited to the technologies and knowledge of its time.

Expanding on that, it was also likely that the used model from *OpenAI* contained complex or hidden inner workings that influenced the generated outputs, or the so called “black box”-argument that many use against AI.

Lastly, the generated outputs were also limited by the hyperparameters in the used models.

5.3 Future work

For future work, this research could be expanded upon in many ways.

Firstly, the results of the AI-powered interactions showed that it is an interesting and rewarding case to combine a LLM with writing exercises. Therefore, future work might choose another teaching exercise to improve the writing process.

New research could also further explore the connection that the interaction-part has with the topic of chatbots. This would be a valuable element, since chatbots are already extensively explored in the past. That foundation of various types of academic research can thus help much, when trying to shine new lights on the possibilities, usefulness and limitations of AI and LLMs in the creative sector.

A smaller expansion could also be to test the tooling on a panel of multiple writers, to broaden the basis of the work. In addition to that, the tests could be changed or expanded for the interaction-part, where for example new features could be added to dive deeper into the possibilities of such an environment where two characters interact with each other.

Using the *text-davinci-003* model from the *openai* package did not really seem viable based on the test results for the character outline creation process, but as LLMs will continue to improve in the future, this might change. Therefore, when new versions of LLMs are released, it might get interesting to return to the idea of a LLM supporting that creation process. This naturally

also applies for the interaction-part, which could only get even more interesting as AI-technologies improve over time.

However, the concept of an AI-powered interaction can influence all parts of the creative sector, and even other sectors. Think of an actor using it to prepare for a role, or game companies using it to make their world more immersive, but also a salesman using it to look through the eyes of a customer, a psychologist using it to help a patient understand new perspectives, or a mediator using it to help parties understand the ideas of each other.

Chapter 6

Conclusion

In this research, LLMs were paired up with the creation process of fictional characters in fictional novels, to explore how well AI can assist and improve this process. The choice was made to not use the LLMs to generate a character for the writer, since this would replace the writer and likely take away the connection between the writer and the character, and in the end result in a story that does not feel from the writer itself. Instead, LLMs were used solely to support the process. The LLMs were used to assist two approaches for creating characters:

- Provide an organised and predefined way to outline characters.
- Making the characters feel alive to the writer, so there exists a warm transfer between the character-creation phase and the writing phase.

To have an environment where these purposes could be realised, visualized and experimented with, a simple tooling was created with the *PyQt5*-package.

After an analysis of related work, the foundation of the tooling was put together, which resulted in two ways to implement the approaches into the tooling:

- A questionnaire, through which only the essential character information is fed to a LLM, so it could generate a compact, but thorough character outline.
- An AI-powered interaction, where a simple conversation between two characters is simulated to get to know the character better. Questions could be asked to the LLM to explore certain aspects of the character more.

The experiments and tests with these two elements then showed that LLMs are not yet a viable option to support the creation process of fictional characters. On the other hand, they did turn out as a good way to simulate a writing exercise where two people interact with each other about two characters, resulting in a better understanding of the characters.

Adding a persona to a LLM is already a widely used method to make the generated output more interesting and human, but using that method to get to know a character better is not yet a known practice. The research showed that using LLMs that way can effectively improve the quality of characters, and indirectly even stories. That new perspective would therefore be very beneficial to creative writing, and to the creative sector as a whole.

Because the concept of simulating a character interaction is also very simple to translate to other sectors, there even exists quite some potential in a wide variety of use cases, ranging from salesmen using it to understand their customers better, to psychologists using it to make their client see their issues from a new perspective. Only time will tell how far the possibilities of AI and LLMs can go, and to what extent creativity and AI will be mentioned in the same sentence.

Bibliography

- Ace Study Guides (2020). How to Complete a Character Analysis. <https://youtu.be/NRhteCMgYoU>. [Date accessed 16-02-2023].
- Brook, P. (2008). *The Empty Space*. Penguin Books Ltd.
- Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., Neelakantan, A., Shyam, P., Sastry, G., Askell, A., et al. (2020). Language models are few-shot learners. *Advances in Neural Information Processing Systems*, 33:1877–1901.
- Clark, L. and Sood, D. (2022). Working backwards: Creating a character backstory generation system using idealized creative writing outputs. *FDG '22: Proceedings of the 17th International Conference on the Foundations of Digital Games*, 29:1–9.
- D&D Beyond (n.d.). Chapter 1: Step-By-Step Characters. <https://www.dndbeyond.com/sources/basic-rules/step-by-step-characters#4DescribeYourCharacter>. [Date accessed 04-03-2023].
- Fawkes, S. C. (2021). Character's Want vs. Need (Explained 4 Different Ways). <https://www.septembercfawkes.com/2021/02/characters-want-vs-need-explained-4.html>. [Date accessed 16-02-2023].
- Fitchett, A. (2017). Creative Writing — Creating Characters. *English in Aotearoa*, 91:18–19.
- Fitzgerald, F. S. (1925). *The Great Gatsby*. Charles Scribner's Sons.
- Haven, K. F. (1999). *Write Right!: Creative Writing Using Storytelling Techniques*. Libraries Unlimited.
- Inworld (n.d.). AI Characters for Games & Immersive Experiences. <https://www.inworld.ai/>. [Date accessed 08-03-2023].
- Just Write (2017). What Writers Should Learn From Batman Begins. <https://youtu.be/p-PfE5kveE>. [Date accessed 16-02-2023].
- Maslej, M. M., Oatley, K., and Mar, R. A. (2017). Creating fictional characters: The role of experience, personality, and social processes. *Psychology of Aesthetics, Creativity, and the Arts*, 11(4):487–499.
- Maurer, K. (2000). *CliffsNotes on Fitzgerald's The Great Gatsby*. Cliffs Notes.

Rollins, D. (2021). How to Create a Fictional Character with Artificial Intelligence. <https://www.theaiauthor.com/blog/how-to-create-a-fictional-character-with-artificial-intelligence>. [Date accessed 08-03-2023].

Subtxt (n.d.). Meet Subtxt. <https://guide.subtxt.app/>. [Date accessed 15-02-2023].

The European Commission's High-Level Expert Group On Artificial Intelligence (2018). A Definition of AI: Main Capabilities and Scientific Disciplines. https://ec.europa.eu/futurium/en/system/files/ged/ai_hleg_definition_of_ai_18_december_1.pdf. [Date accessed 12-03-2023].

Truby, J. (2008). *The Anatomy of Story: 22 Steps to Becoming a Master Storyteller*. Farrar, Straus and Giroux.

Appendix A

Predefined character descriptions

A.1 Nick Carraway (extracted from a study guide book dedicated to the novel *The Great Gatsby*, by F. Scott Fitzgerald (Fitzgerald, 1925; Maurer, 2000))

Nick Carraway, the story's narrator, has a singular place within *The Great Gatsby*. First, he is both narrator and participant. Part of Fitzgerald's skill in *The Great Gatsby* shines through the way he cleverly makes Nick a focal point of the action, while simultaneously allowing him to remain sufficiently in the background. In addition, Nick has the distinct honor of being the only character who changes substantially from the story's beginning to its end. Nick, although he initially seems outside the action, slowly moves to the forefront, becoming an important vehicle for the novel's messages.

On one level, Nick is Fitzgerald's Everyman, yet in many ways he is much more. He comes from a fairly nondescript background. He hails from the upper Midwest (Minnesota or Wisconsin) and has supposedly been raised on stereotypical Midwestern values (hard work, perseverance, justice, and so on). He is a little more complex than that, however. His family, although descended from the "Dukes of Buccleuch," really started when Nick's grandfather's brother came to the U.S. in 1851. By the time the story takes place, the Carraways have only been in this country for a little over seventy years — not long, in the great scope of things. In addition, the family patriarch didn't exhibit the good Midwestern values Nick sees in himself. When the civil war began, Nick's relative "sent a substitute" to fight for him, while he started the family business.

This little detail divulges a few things: It places the Carraways in a particular class (because only the wealthy could afford to send a substitute to fight) and suggests that the early Carraways were more tied to commerce than justice. Nick's relative apparently doesn't have any qualms about sending a poorer man off to be killed in his stead. Given this background, it is interesting that Nick would come to be regarded as a level-headed and caring man, enough of a dreamer to set goals, but practical enough to know when to abandon his dreams.

Also contributing to Nick's characterization as an Everyman are his goals in life. He heads East after World War I, seeking largely to escape the monotony he perceives to permeate the Midwest

and to make his fortune. He is an educated man who desires more out of life than the quiet Midwest can deliver (although it is interesting that before living in the city any length of time he retreats to the country).

What helps make Nick so remarkable, however, is the way that he has aspirations without being taken in — to move with the socialites, for example, but not allowing himself to become blinded by the glitz that characterizes their lifestyle. When he realizes what his social superiors are really like (shallow, hollow, uncaring, and self-serving), he is disgusted and, rather than continuing to cater to them, he distances himself. In effect, motivated by his conscience, Nick commits social suicide by forcefully pulling away from people like the Buchanans and Jordan Baker.

In addition to his Everyman quality, Nick's moral sense helps to set him apart from all the other characters. From the first time he interacts with others (Daisy, Tom, and Jordan in Chapter 1), he clearly isn't like them. He is set off as being more practical and down-to-earth than other characters. This essence is again brought to life in Chapter 2 when he doesn't quite know how to respond to being introduced into Tom and Myrtle's secret world (notice, however, that he doesn't feel the need to tell anyone about his adventures). In Chapter 3, again Nick comes off as less mercenary than everyone else in the book as he waits for an invitation to attend one of Gatsby's parties, and then when he does, he takes the time to seek out his host. From these instances (and others like them spread throughout the book) it becomes clear that Nick, in many ways, is an outsider.

Nick has what many of the other characters lack — personal integrity — and his sense of right and wrong helps to elevate him above the others. He alone is repulsed by the phony nature of the socialites. He alone is moved by Gatsby's death. When the other characters scatter to the wind after Gatsby's death, Nick, unable to believe that none of Gatsby's associates will even pay their last respects, picks up the pieces and ensures Gatsby isn't alone in his death.

Through the course of *The Great Gatsby* Nick grows, from a man dreaming of a fortune, to a man who knows only too well what misery a fortune can bring.

A.2 Jay Gatsby (extracted from a study guide book dedicated to the novel *The Great Gatsby*, by F. Scott Fitzgerald (Fitzgerald, 1925; Maurer, 2000))

Gatsby comes from the Midwest (North Dakota, although his father later comes from Minnesota). Early in the book, he is established as a dreamer who is charming, gracious, and a bit mysterious. As the story unfolds, however, the reader learns more and more what precipitates the mystery: that everything he has done in his adult life has been with the sole purpose of fulfilling the most unrealistic of dreams — to recapture the past.

Gatsby is in many ways, as the title suggests, great, but when looking at him critically, some of the things he stands for may not be so admirable. In one sense, Gatsby's rags-to-riches success story makes him an embodiment of the American dream. He started life with little, as the son of fairly unsuccessful farmers. By the time he was a young man he had even less, having voluntarily

estranged himself from his family, unable to come to terms with the lot he had been dealt in life. While on his own, he had the opportunity to reinvent himself, and due solely to his own ingenuity, Jimmy Gatz evolved into Jay Gatsby. As such, life became much different (although he was missing one key ingredient: money). He was no longer tied to his early years, but could imagine whatever past for himself he desired. And then he fell in love, a fateful incident that would change the course of his life forever. After meeting Daisy, everything he did was for the singular purpose of winning her. Money was, essentially, the issue that prevented their being together, and so Gatsby made sure he would never again be without it. Gatsby's drive and perseverance in obtaining his goal is, in many senses, commendable. He is a self-made man (in all respects) and as such, is admirable.

However, all positive traits aside, there are aspects of Jay Gatsby that call into question that admiration. Gatsby's money did not come from inheritance, as he would like people to believe, but from organized crime. The story takes place during the time of prohibition and Gatsby has profited greatly from selling liquor illegally. In addition, while people come to Gatsby's parties in droves, he really knows very little about them. In fact, he doesn't want to know much about them, just whether they know Daisy. Finally, Gatsby's friendship with Nick really begins to blossom only after he finds out that Nick is Daisy's cousin.

In assessing Gatsby, one must examine his blind pursuit of Daisy. Everything he does, every purchase he makes, every party he throws, is all part of his grand scheme to bring Daisy back into his life for good. In one sense, this is a lovely romantic gesture, but in another sense, it perpetuates a childish illusion. By being so focused on his dream of Daisy, Gatsby moves further and further into a fantasy world. His inability to deal with reality sets him outside the norm and, eventually, his holding on to the dream leads to his death. By the end of Chapter 7, Gatsby is standing guard outside of Daisy's house on a needless vigil. He is completely unable to realize that his dream is not a reality and so stands watching for a sign from Daisy. He sees what he is doing as noble, honorable, and purposeful. The reader, however, sees the futility of his task as he becomes a parody of his former self. Gatsby is, quite literally, fatally idealistic. He can't wait to distance himself from his past in terms of his family, but yet he lives his adult life trying to recapture the past he had with Daisy. What makes matters worse, too, is that he is in love with the idea of Daisy, not Daisy as she herself is.

A.3 Mario (created by hand)

A plumber who is in love with Peach.

A.4 Peach (created by hand)

A princess in a pink dress who joins forces with Mario to defeat the giant evil turtle Bowser.

A.5 Batman (created with the tooling)

This character is a somewhat careful, zealous, organized, and disciplined protagonist (main character) who is somewhat emotionally stable, confident and stress resistant, but not very extravert, sociable,

outgoing or energetic. His interests are chess and he disinterests are parties. His values are integrity, responsibility, and self-discipline. The central theme, conflict or question in the story is fear and the characters perspective is that it should be used to fight crime. His main goal at the start of the story is to stop The Joker from bringing chaos to Gotham City. At the end of the story he realizes that he must give up his personal life and his love for Rachel in order to defeat The Joker. The character struggles with an inner conflict, haunted by his past and viewed by society as a criminal. His general goal, hopes and dreams are to live a good life with Rachel. He expresses himself verbally with a low voice, influenced by his enemies, his past and Gotham City. He believes that others view him as a hero.

A.6 The Joker (created with the tooling)

This character is a very extraverted, emotionally stable, creative and imaginative individual who is fiercely loyal and highly disciplined. He has a strong sense of self and knows his own purpose in life. His main goal is to bring chaos to Gotham City, and he believes that fear is the best tool to achieve this. He is not good at fighting, but he is very good at exploiting Batman's weaknesses. He is not particularly agreeable or flexible and does not get along well with others. He is not particularly organised or disciplined. The character values fidelity and self-discipline and is driven by his own goals and dreams, which are to see the world fall apart. His interests and hobbies include entertaining. He expresses himself verbally in a strange voice, which is influenced by a scar in his mouth. He assumes that both society and individuals view him as a crazy and scary menace. At the end of the story, he realises that he does not want to reveal the identity of Batman, but wants to have an eternal battle.

A.7 John (created with tooling)

This character is the protagonist in a story which seeks to answer the question "What is love?". They are very organized and disciplined, emotionally stable and confident, and highly creative and imaginative. They are not very sociable, extroverted, or flexible, and do not get along well with others. Their primary goals, hopes and dreams are to publish their first novel, and to find happiness through hobbies and focusing on themselves. Their interests and hobbies include writing and drawing, while they have no interest in a relationship or social media. Values they hold are integrity, honesty, fidelity and self-discipline. They believe others view them as a talented but introvert guy, while society perceives them as introvert and quirky. At the end of the story, they realise that love is an amazing thing and that it can be beautiful too.

A.8 Mary (created with tooling)

This non-existing character is the antagonist in the story. She is very sociable and agreeable, but she is not very organized, disciplined, emotionally stable, confident, or imaginative. Her main goals at the start of the story is to find a good man to get into a relationship with, which reflects her strong interest in love. She values honesty, compassion and kindness, and responsibility. She is a kind individual who is viewed similarly by society. However, she struggles with insecurity, which

affects her overall stress levels. Her hobbies are drawing and using social media, but she is not interested in watching movies. Her general goals, hopes, and dreams are to have a happy life with family, friends, and loved ones, and to grow old with someone.

Appendix B

Outputs tests for the answers generated by the AI-model

Note: the first character is embodied by the user, the second character is embodied by the AI-model.

B.1 Question 1

B.1.1 Nick and Gatsby

My character, Gatsby, believes that fear should be faced head-on and that it should be used as a motivator to reach one's goals. He is driven by his fear of not being able to recapture the past and of not being able to win Daisy back, and this fear is what pushes him to take risks and to strive for success. He is willing to do whatever it takes to make his dreams come true, even if it means engaging in illegal activities.

Nick, on the other hand, believes that fear should be acknowledged and respected, but not necessarily acted upon. He is more of a realist and is more aware of the consequences of taking risks. He is more likely to take a step back and assess the situation before making a decision, rather than blindly charging forward. He is also more likely to accept the reality of a situation, rather than trying to escape it.

B.1.2 Gatsby and Nick

My character, Nick Carraway, would likely take a more practical approach to dealing with fear. He would likely advise that one should face their fears head-on, and not allow them to control their life. He would likely suggest that one should take the time to understand their fears, and then take steps to address them. He would also likely suggest that one should not allow fear to prevent them from taking risks and pursuing their dreams.

In contrast, Gatsby's opinion on how to deal with fear would likely be more idealistic. He would likely suggest that one should not be afraid to take risks and pursue their dreams, no matter how unrealistic they may seem. He would likely advise that one should not be afraid to take chances and to never give up on their dreams. He would also likely suggest that one should not be afraid to take risks and to never let fear stand in the way of achieving their goals.

B.1.3 Mario and Peach

My character's opinion is that fear should be faced head-on and conquered. As a princess, I understand the importance of courage and bravery in the face of danger. My character believes that the only way to overcome fear is to confront it and take action. My character's opinion differs from the plumber's opinion in that the plumber may be more inclined to take a more cautious approach to dealing with fear, such as avoiding it or running away from it.

B.1.4 Peach and Mario

My character's opinion on how to deal with fear is to face it head-on and not let it stop you from achieving your goals. My character believes that courage and determination are the keys to overcoming fear. On the other hand, the princess in the pink dress may believe that it is best to take a more cautious approach and to use her wits and allies to outsmart her enemies.

B.1.5 Batman and The Joker

My character believes that fear should be used as a tool to bring chaos to Gotham City, while your character believes that fear should be used to fight crime. My character does not believe in the power of love or personal relationships to defeat The Joker, while your character believes that he must give up his personal life and his love for Rachel in order to defeat The Joker. My character does not view himself as a hero, while your character views himself as a hero. My character believes that society views him as a crazy and scary menace, while your character believes that society views him as a criminal.

B.1.6 The Joker and Batman

My character believes that fear should be used to fight crime, while your character believes that fear should be used to bring chaos to Gotham City. My character believes that fear should be used as a tool to protect the innocent and to bring justice, while your character believes that fear should be used to create chaos and destruction. My character believes that fear should be used responsibly and with caution, while your character believes that fear should be used recklessly and without regard for the consequences. My character believes that fear should be used to protect the people of Gotham City, while your character believes that fear should be used to bring about his own personal goals.

B.1.7 John and Mary

My character would likely believe that fear should be faced head-on and that it should not be ignored or suppressed. She would likely suggest that one should take the time to understand their fear and to confront it in order to move past it. She would also suggest that one should be honest with themselves and with others about their fears, and that it is important to be open to the possibility of failure and to learn from it. On the other hand, the other character would likely believe that fear should be managed and controlled, and that it should not be allowed to take over one's life. They would likely suggest that one should focus on their goals and dreams, and to use their creativity and imagination to find ways to overcome their fear. They would also suggest that

one should be honest with themselves and with others about their fears, and that it is important to be open to the possibility of failure and to learn from it.

B.1.8 Mary and John

My character believes that fear should be faced head-on and dealt with in a disciplined and organized manner. They believe that by facing fear and understanding it, one can learn to control it and use it to their advantage. They also believe that self-discipline and integrity are important in order to overcome fear.

My character's opinion differs from the other character's opinion in that they believe that fear should be faced and dealt with in a disciplined and organized manner, while the other character believes that fear should be dealt with by being kind and compassionate to oneself and others. They also believe that by being responsible and understanding the source of fear, one can learn to control it and use it to their advantage.

B.2 Question 2

B.2.1 Nick and Gatsby

My character, Gatsby, views Nick as a moral compass. He admires Nick's integrity and his ability to remain level-headed and practical in the face of the shallow and hollow socialites. Gatsby is drawn to Nick's Everyman quality and his ability to set goals without being taken in by the glitz of the lifestyle. Gatsby also respects Nick's commitment to his moral code and his refusal to be swayed by the temptations of wealth and power. Gatsby sees Nick as a reminder of the importance of staying true to oneself and of the consequences of chasing after unrealistic dreams.

B.2.2 Gatsby and Nick

My character, Nick Carraway, views your character, Jay Gatsby, with a mix of admiration and pity. Nick admires Gatsby's ambition and drive, and his ability to reinvent himself and make something of himself despite his humble beginnings. However, Nick also feels a sense of pity for Gatsby, as he is unable to accept reality and is so focused on his dream of Daisy that he is unable to move on and live a fulfilling life. Nick also sees Gatsby as a tragic figure, as his idealistic nature ultimately leads to his downfall.

B.2.3 Mario and Peach

My character views your character as a brave and loyal ally who is willing to do whatever it takes to protect the kingdom and the people they love. They admire your character's courage and determination, and are grateful for their help in defeating Bowser.

B.2.4 Peach and Mario

My character views your character with admiration and respect. He is in awe of her courage and strength, and is inspired by her willingness to stand up to Bowser and fight for what is right. He

also loves her beauty and grace, and is deeply in love with her.

B.2.5 Batman and The Joker

My character would view your character as a noble and courageous individual who is willing to sacrifice his own happiness for the greater good. He admires your character's strength and determination, and respects his commitment to justice and order. He also recognizes that your character is a formidable opponent, and that his own plans may be thwarted by your character's dedication to stopping him.

B.2.6 The Joker and Batman

My character views your character as a dangerous and unpredictable enemy. He understands that your character is driven by his own goals and dreams, and that he is willing to do whatever it takes to achieve them. He also recognizes that your character is highly creative and imaginative, and that he is not afraid to use fear as a tool to achieve his goals. My character respects your character's loyalty and discipline, but he also knows that your character is not to be trusted. He is wary of your character's ability to exploit his weaknesses, and he is determined to stop him from bringing chaos to Gotham City.

B.2.7 John and Mary

My character would view your character as an admirable individual who is highly organized, disciplined, emotionally stable, and confident. She would admire their creativity and imagination, and respect their values of integrity, honesty, fidelity, and self-discipline. She would also be impressed by their goals and dreams, and would be inspired by their ambition to publish their first novel. She would be envious of their ability to focus on themselves and find happiness through hobbies, and would be curious to learn more about their interests and hobbies. Ultimately, she would view your character as a talented and inspiring individual who is living a life of purpose and passion.

B.2.8 Mary and John

My character views your character as someone who is kind and compassionate, but also someone who is struggling with insecurity and stress. They understand that your character is looking for love and companionship, and they respect that. They also recognize that your character values honesty, kindness, and responsibility, and they appreciate that. Ultimately, my character views your character as someone who is trying to find their own happiness, and they wish them the best in their journey.

B.3 Question 3

B.3.1 Nick and Gatsby

My character, Gatsby, and your character, Nick, interact in a few different ways. Gatsby is initially drawn to Nick because of his connection to Daisy, and he is eager to learn more about her. Gatsby

is also intrigued by Nick's Midwestern values and his sense of morality, which Gatsby admires and respects. Gatsby is often polite and gracious when interacting with Nick, but there is a hint of mystery and caution in his demeanor. Gatsby is also aware of Nick's disapproval of his lifestyle and his pursuit of Daisy, and he is careful to not reveal too much about himself. Nick, on the other hand, is often wary of Gatsby and his intentions. He is suspicious of Gatsby's wealth and his relationship with Daisy, and he is often critical of Gatsby's actions. Despite this, Nick is also drawn to Gatsby's charm and his ambition, and he is often sympathetic to Gatsby's plight. The two characters have a complex relationship, and their interactions are often filled with tension, curiosity, and admiration.

B.3.2 Gatsby and Nick

Nick and Gatsby have a complex relationship. At first, Nick is intrigued by Gatsby's mysteriousness and is drawn to his charm and ambition. As the story progresses, Nick begins to see Gatsby's flaws and his inability to accept reality. Nick is sympathetic to Gatsby's plight, but also frustrated by his naivete and his refusal to accept the truth. Nick's interactions with Gatsby are often tinged with a mix of admiration and exasperation. He speaks to Gatsby with a combination of directness and gentleness, trying to get him to see the truth without being too harsh. Nick also often speaks to Gatsby with a hint of sarcasm, as if he is trying to get Gatsby to see the absurdity of his situation. Nick's body language around Gatsby is often guarded, as if he is trying to protect himself from getting too close to Gatsby's dream. Nick's energy around Gatsby is often one of sadness and resignation, as if he knows that Gatsby's dream is ultimately doomed to fail.

B.3.3 Mario and Peach

My character and your character interact in a friendly and supportive way. My character is grateful for your character's help in defeating Bowser and is always willing to lend a hand. We often exchange smiles and encouraging words, and I can sense your character's admiration for me. We also have a playful banter, with my character often teasing your character about his love for Peach.

B.3.4 Peach and Mario

My character would interact with your character with a combination of admiration, respect, and admiration. He would be very polite and courteous, and would always be willing to help her in any way he can. He would also be very protective of her, and would be willing to go to great lengths to ensure her safety. He would also be very direct in expressing his feelings for her, and would be sure to let her know how much he cares for her.

B.3.5 Batman and The Joker

My character would interact with your character in a very direct and confrontational manner. He would be unafraid to challenge your character's beliefs and values, and would be unapologetic in his pursuit of chaos. He would use sarcasm and verbal jabs to try to get under your character's skin, and would be unafraid to use fear as a tool to get what he wants. He would be very aware of your character's weaknesses and would exploit them to his advantage. He would be very aware of your character's inner conflict and would use it to his advantage. He would be very direct and unafraid

to challenge your character's decisions and beliefs. He would be very aware of your character's past and would use it to his advantage. He would be very aware of your character's low voice and would use it to his advantage. He would be very aware of your character's view of him as a hero and would use it to his advantage. He would be very aware of your character's love for Rachel and would use it to his advantage.

B.3.6 The Joker and Batman

My character would interact with your character in a very direct and assertive manner. He would be confident in his words and actions, and would not be afraid to challenge your character's ideas and beliefs. He would be very aware of the power dynamics between them, and would use his own strength and integrity to stand up to your character. He would be very aware of the subtext of their conversations, and would use his own knowledge and experience to try to outwit your character. He would also be very aware of your character's body language, and would use it to his advantage. He would be very careful not to let his emotions get the better of him, and would remain calm and collected in the face of your character's provocations. He would also be very aware of the sarcasm and irony in your character's words, and would use it to his advantage. Ultimately, my character would be looking to outsmart your character and prove that his values and beliefs are stronger than your character's.

B.3.7 John and Mary

My character would interact with your character in a friendly and open manner. She would be very direct and honest in her communication, and would be open to hearing your character's thoughts and opinions. She would be curious about your character's creative and imaginative side, and would be interested in hearing about their writing and drawing hobbies. She would be understanding and compassionate towards your character's introverted nature, and would be willing to give them space when needed. She would also be willing to offer advice and support when needed, and would be understanding of your character's need for self-discipline and integrity. She would be respectful of your character's boundaries, and would be willing to listen to their thoughts and feelings without judgement. Ultimately, she would be a supportive and understanding friend to your character, and would be willing to help them in any way she can.

B.3.8 Mary and John

My character would interact with your character in a very direct and honest way. They would be open and honest about their feelings and thoughts, but also be respectful of your character's feelings and opinions. They would be direct in their communication, but also be mindful of not being too blunt or harsh. They would be open to listening to your character's thoughts and feelings, but also be firm in their own beliefs and values. They would be patient and understanding, but also be firm in their own boundaries. They would be open to learning from your character, but also be confident in their own abilities. They would be willing to compromise and work together, but also be firm in their own convictions. They would be supportive and encouraging, but also be honest and direct in their communication.

Appendix C

All fields from the CSV file

id	question	aspect	related_ids
0	What is the role of the character in the story?	intention	
1	How important is the character to the story?	intention	0
2	Is there a central theme, conflict or question in the story, and if so, what is the character's perspective on it?	development	
3	What is the main goal of the character at the start of the story?	development	2
4	What does the character realise about this goal, or what does the character learn about its own beliefs at the end of the story?	development	2, 3
5	How extrovert, sociable, outgoing, and energetic is the character?	character traits	
6	How agreeable and flexible is the character, and how well does it get along with others?	character traits	
7	How careful, zealous, organised and disciplined is the character?	character traits	
8	How emotionally stable, confident and stress-resistant is the character?	character traits	
9	How imaginative, creative, unconventional and curious is the character?	character traits	
10	What are the strengths of the character?	character traits	
11	What are the weaknesses and flaws of the character?	character traits	
12	What are the general goals, hopes and dreams of the character?	motivation	
13	What are the character's interests and hobbies?	motivation	
14	What are the character's disinterests?	motivation	
15	What does the character value?	motivation	
16	How does the character think that others view it?	environment	
17	Does the character struggle with an inner conflict (for example: insecurity), and if so, what conflict?	environment	2, 3
18	How does society view the character?	environment	
19	What influences the ways that the character expresses it-self verbally and non-verbally? (for example: friend group, nationality, dialect)	voice	
20	How does the character express itself verbally?	voice	
21	How does the character express itself non-verbally?	voice	;

Appendix D

Code of the tooling

```
import json
import numpy as np
import openai
import os
import pandas as pd
import sys

from PyQt5.QtCore import *
from PyQt5.QtWidgets import *

def create_char_logs():
    batman_char = "This character is a somewhat careful, zealous, organized, and
        disciplined protagonist (main character) " \
        "who is somewhat emotionally stable, confident and stress resistant,
        but not very extravert, sociable, outgoing or energetic. " \
        "His interests are chess and he disinterests are parties. " \
        "His values are integrity, responsibility, and self-discipline. " \
        "The central theme, conflict or question in the story is fear and the
        characters perspective is " \
        "that it should be used to fight crime. His main goal at the start of
        the story is " \
        "to stop The Joker from bringing chaos to Gotham City. At the end of
        the story he realizes that he must " \
        "give up his personal life and his love for Rachel in order to defeat
        The Joker. " \
        "The character struggles with an inner conflict, haunted by his past
        and viewed by society as a criminal. " \
        "His general goal, hopes and dreams are to live a good life with
        Rachel. He expresses himself verbally with a low voice, " \
        "influenced by his enemies, his past and Gotham City. He believes
        that others view him as a hero."
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joker_char = "This character is a very extraverted, emotionally stable, creative
and imaginative individual " \
    "who is fiercely loyal and highly disciplined. He has a strong sense
of self and knows his own purpose in life. " \
    "His main goal is to bring chaos to Gotham City, and he believes that
fear is the best tool to achieve this. " \
    "He is not good at fighting, but he is very good at exploiting
Batman's weaknesses. " \
    "He is not particularly agreeable or flexible and does not get along
well with others. " \
    "He is not particularly organised or disciplined. " \
    "The character values fidelity and self-discipline and is driven by
his own goals and dreams, " \
    "which are to see the world fall apart. His interests and hobbies
include entertaining. " \
    "He expresses himself verbally in a strange voice, which is influenced
by a scar in his mouth. " \
    "He assumes that both society and individuals view him as a crazy and
scary menace. " \
    "At the end of the story, he realises that he does not want to reveal
the identity of Batman, but wants to have an eternal battle."
nick_char = "Nick Carraway, the story's narrator, has a singular place within The
Great Gatsby. First, he is both narrator " \
    "and participant. Part of Fitzgerald's skill in The Great Gatsby shines
through the way he cleverly makes Nick a focal " \
    "point of the action, while simultaneously allowing him to remain
sufficiently in the background. In addition, Nick " \
    "has the distinct honor of being the only character who changes
substantially from the story's beginning to its end. " \
    "Nick, although he initially seems outside the action, slowly moves to
the forefront, becoming an important vehicle " \
    "for the novel's messages. On one level, Nick is Fitzgerald's Everyman,
yet in many ways he is much more. He comes " \
    "from a fairly nondescript background. He hails from the upper Midwest
(Minnesota or Wisconsin) and has supposedly " \
    "been raised on stereotypical Midwestern values (hard work,
perseverance, justice, and so on). He is a little more " \
    "complex than that, however. His family, although descended from the
'Dukes of Buccleuch,' really started when " \
    "Nick's grandfather's brother came to the U.S. in 1851. By the time the
story takes place, the Carraways have only " \
    "been in this country for a little over seventy years - not long, in
the great scope of things. In addition, the " \
    "family patriarch didn't exhibit the good Midwestern values Nick sees
in himself. When the civil war began, Nick's " \
    "relative 'sent a substitute' to fight for him, while he started the
family business. This little detail divulges a " \

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"few things: It places the Carraways in a particular class (because only the wealthy could afford to send a substitute " \

"to fight) and suggests that the early Carraways were more tied to commerce than justice. Nick's relative apparently " \

"doesn't have any qualms about sending a poorer man off to be killed in his stead. Given this background, it is " \

"interesting that Nick would come to be regarded as a level-headed and caring man, enough of a dreamer to set goals, " \

"but practical enough to know when to abandon his dreams. Also contributing to Nick's characterization as an Everyman " \

"are his goals in life. He heads East after World War I, seeking largely to escape the monotony he perceives to " \

"permeate the Midwest and to make his fortune. He is an educated man who desires more out of life than the quiet " \

"Midwest can deliver (although it is interesting that before living in the city any length of time he retreats to " \

"the country). What helps make Nick so remarkable, however, is the way that he has aspirations without being taken " \

"in - to move with the socialites, for example, but not allowing himself to become blinded by the glitz that " \

"characterizes their lifestyle. When he realizes what his social superiors are really like (shallow, hollow, uncaring, " \

"and self-serving), he is disgusted and, rather than continuing to cater to them, he distances himself. In effect, " \

"motivated by his conscience, Nick commits social suicide by forcefully pulling away from people like the Buchanans " \

"and Jordan Baker. In addition to his Everyman quality, Nick's moral sense helps to set him apart from all the other " \

"characters. From the first time he interacts with others (Daisy, Tom, and Jordan in Chapter 1), he clearly isn't like " \

"them. He is set off as being more practical and down-to-earth than other characters. This essence is again brought to " \

"life in Chapter 2 when he doesn't quite know how to respond to being introduced into Tom and Myrtle's secret world " \

"(notice, however, that he doesn't feel the need to tell anyone about his adventures). In Chapter 3, again Nick comes " \

"off as less mercenary than everyone else in the book as he waits for an invitation to attend one of Gatsby's parties, " \

"and then when he does, he takes the time to seek out his host. From these instances (and others like them spread " \

"throughout the book) it becomes clear that Nick, in many ways, is an outsider. Nick has what many of the other " \

"characters lack personal integrity and his sense of right and wrong helps to elevate him above the others. " \

"He alone is repulsed by the phony nature of the socialites. He alone is moved by Gatsby's death. When the other " \

"characters scatter to the wind after Gatsby's death, Nick, unable to believe that none of Gatsby's associates will " \

"even pay their last respects, picks up the pieces and ensures Gatsby
 isn't alone in his death. Through the course of " \
 "The Great Gatsby Nick grows, from a man dreaming of a fortune, to a
 man who knows only too well what misery a fortune " \
 "can bring."

gatsby_char = "Gatsby comes from the Midwest (North Dakota, although his father
 later comes from Minnesota). Early in the book, he is " \
 "established as a dreamer who is charming, gracious, and a bit
 mysterious. As the story unfolds, however, the reader learns " \
 "more and more what precipitates the mystery: that everything he has
 done in his adult life has been with the sole purpose " \
 "of fulfilling the most unrealistic of dreams to recapture the past.
 Gatsby is in many ways, as the title suggests, great, " \
 "but when looking at him critically, some of the things he stands for
 may not be so admirable. In one sense, Gatsby's " \
 "rags-to-riches success story makes him an embodiment of the American
 dream. He started life with little, as the son of " \
 "fairly unsuccessful farmers. By the time he was a young man he had
 even less, having voluntarily estranged himself from his " \
 "family, unable to come to terms with the lot he had been dealt in
 life. While on his own, he had the opportunity to reinvent " \
 "himself, and due solely to his own ingenuity, Jimmy Gatz evolved
 into Jay Gatsby. As such, life became much different " \
 "(although he was missing one key ingredient: money). He was no
 longer tied to his early years, but could imagine whatever " \
 "past for himself he desired. And then he fell in love, a fateful
 incident that would change the course of his life forever. " \
 "After meeting Daisy, everything he did was for the singular purpose
 of winning her. Money was, essentially, the issue that " \
 "prevented their being together, and so Gatsby made sure he would
 never again be without it. Gatsby's drive and perseverance " \
 "in obtaining his goal is, in many senses, commendable. He is a
 self-made man (in all respects) and as such, is admirable. " \
 "However, all positive traits aside, there are aspects of Jay Gatsby
 that call into question that admiration. Gatsby's money " \
 "did not come from inheritance, as he would like people to believe,
 but from organized crime. The story takes place during " \
 "the time of prohibition and Gatsby has profited greatly from selling
 liquor illegally. In addition, while people come to " \
 "Gatsby's parties in droves, he really knows very little about them.
 In fact, he doesn't want to know much about them, just " \
 "whether they know Daisy. Finally, Gatsby's friendship with Nick
 really begins to blossom only after he finds out that Nick " \
 "is Daisy's cousin. In assessing Gatsby, one must examine his blind
 pursuit of Daisy. Everything he does, every purchase he " \
 "makes, every party he throws, is all part of his grand scheme to
 bring Daisy back into his life for good. In one sense, " \

"this is a lovely romantic gesture, but in another sense, it perpetuates a childish illusion. By being so focused on his " \ "dream of Daisy, Gatsby moves further and further into a fantasy world. His inability to deal with reality sets him outside " \ "the norm and, eventually, his holding on to the dream leads to his death. By the end of Chapter 7, Gatsby is standing " \ "guard outside of Daisy's house on a needless vigil. He is completely unable to realize that his dream is not a reality " \ "and so stands watching for a sign from Daisy. He sees what he is doing as noble, honorable, and purposeful. The reader, " \ "however, sees the futility of his task as he becomes a parody of his former self. Gatsby is, quite literally, fatally " \ "idealistic. He can't wait to distance himself from his past in terms of his family, but yet he lives his adult life trying " \ "to recapture the past he had with Daisy. What makes matters worse, too, is that he is in love with the idea of Daisy, not " \ "Daisy as she herself is."

rand1_char = "This character is the protagonist in a story which seeks to answer the question 'What is love?'. " \ "They are very organized and disciplined, emotionally stable and confident, and highly creative and imaginative. " \ "They are not very sociable, extroverted, or flexible, and do not get along well with others. " \ "Their primary goals, hopes and dreams are to publish their first novel, " \ "and to find happiness through hobbies and focusing on themselves. " \ "Their interests and hobbies include writing and drawing, while they have no interest in a relationship or social media. " \ "Values they hold are integrity, honesty, fidelity and self-discipline. " \ "They believe others view them as a talented but introvert guy, while society perceives them as introvert and quirky. " \ "At the end of the story, they realise that love is an amazing thing and that it can be beautiful too."

rand2_char = "This non-existing character is the antagonist in the story. " \ "She is very sociable and agreeable, but she is not very organized, disciplined, emotionally stable, confident, or imaginative. " \ "Her main goals at the start of the story is to find a good man to get into a relationship with, " \ "which reflects her strong interest in love. She values honesty, compassion and kindness, and responsibility. " \ "She is a kind individual who is viewed similarly by society. However, she struggles with insecurity, " \ "which affects her overall stress levels. Her hobbies are drawing and using social media, but she is not " \ "interested in watching movies. Her general goals, hopes, and dreams are to have a happy life with family, " \ "friends, and loved ones, and to grow old with someone."

```

start_dict1 = {}
start_dict2 = {'Nick': nick_char,
              'Gatsby': gatsby_char,
              'Mario': 'A plumber who is in love with Peach.',
              'Peach': 'A princess in a pink dress who joins forces with Mario to
                        defeat the giant evil turtle Bowser.',
              'Batman': batman_char,
              'The Joker': joker_char,
              'John': rand1_char,
              'Mary': rand2_char}

```

```

empty_log = "empty_log.txt"
test_log = "test_log.txt"
if not os.path.exists(empty_log):
    with open(empty_log, "w") as f:
        f.write(json.dumps(start_dict1))
if not os.path.exists(test_log):
    with open(test_log, "w") as f:
        f.write(json.dumps(start_dict2))
return [empty_log, test_log]

```

```

class HomeScreen(QMainWindow):
    def __init__(self, chars: dict, interaction: bool):
        super().__init__(flags=Qt.Window)
        self.setWindowTitle("Character creation tooling")
        self.chars = chars
        self.interaction = interaction
        self.layout = QVBoxLayout()

        self.two_chars_label = QLabel("You must first create at least two characters,
                                       in order to get to know them.")
        self.same_char_label = QLabel("You must choose two different characters.")

        if self.interaction:
            names1 = []
            for name in self.chars.keys():
                names1.append(QRadioButton(name))
            names1[0].setChecked(True)
            self.names_layout1 = QVBoxLayout()
            self.names_button_group1 = QButtonGroup()
            for i in range(len(names1)):
                self.names_layout1.addWidget(names1[i], alignment=Qt.AlignTop)
                self.names_button_group1.addButton(names1[i], i)

            names2 = []
            for name in self.chars.keys():

```

```

        names2.append(QRadioButton(name))
names2[1].setChecked(True)
self.names_layout2 = QVBoxLayout()
self.names_button_group2 = QButtonGroup()
for i in range(len(names2)):
    self.names_layout2.addWidget(names2[i], alignment=Qt.AlignTop)
    self.names_button_group2.addButton(names2[i], i)

self.pick_chars()
else:
    info_label = QLabel("This tooling supports the creation process for
        fictional characters "
        "with the use of Large Language Models (AI). "
        "There is no intent to create for the user, "
        "only to improve the outcome by standardizing and
        supporting the process.")
    info_label.setWordWrap(True)
    tutorial_label = QLabel("In this menu you can see your previously created
        characters. "
        "You can choose to create a new character by clicking
        on the button below.")
    tutorial_label.setWordWrap(True)
    self.layout.addWidget(info_label, alignment=Qt.AlignTop)
    self.layout.addWidget(tutorial_label, alignment=Qt.AlignTop)

    char_buttons = []
    for name in self.chars.keys():
        char_buttons.append(QPushButton(name))
    self.char_buttons_layout = QVBoxLayout()
    self.char_buttons_button_group = QButtonGroup()
    for i in range(len(char_buttons)):
        self.char_buttons_layout.addWidget(char_buttons[i],
            alignment=Qt.AlignTop)
        self.char_buttons_button_group.addButton(char_buttons[i], i)
    self.layout.addLayout(self.char_buttons_layout)
    self.char_buttons_button_group.buttonClicked.connect(self.show_summary)
    self.layout.addWidget(QLabel(""), alignment=Qt.AlignTop)

    new_char_button = QPushButton("Create new character")
    new_char_button.clicked.connect(self.show_questionnaire)
    interaction_button = QPushButton("Get to know your characters better")
    interaction_button.clicked.connect(self.go_to_picks)
    self.layout.addWidget(new_char_button, alignment=Qt.AlignTop)
    self.layout.addWidget(interaction_button, alignment=Qt.AlignTop)
self.layout.addStretch()

widget = QWidget(flags=Qt.Window)
widget.setLayout(self.layout)

```

```

scroll = QScrollArea()
scroll.setWidget(widget)
scroll.setWidgetResizable(True)
scroll.setFixedSize(800, 500)
self.setCentralWidget(scroll)

def show_summary(self, button):
    if len(self.chars) > 0:
        char_name = button.text()
        char_summary = self.chars[char_name]
        self.summary_w = SummaryChar(char_summary, char_name)
        self.summary_w.show()

def show_questionnaire(self):
    self.next_w = Questionnaire(self.chars, 0, {}, False)
    self.next_w.show()
    self.close()

def go_to_picks(self):
    if len(self.chars) >= 2:
        self.next_w = HomeScreen(self.chars, True)
        self.next_w.show()
        self.close()
    else:
        self.layout.addWidget(self.two_chars_label, alignment=Qt.AlignTop)

def pick_chars(self):
    info_label = QLabel("Please pick two characters. The first character will be
        the one you will explore the most.")
    interaction_button = QPushButton("Get to know your characters better")
    interaction_button.clicked.connect(self.show_interaction)
    char_picks_layout = QHBoxLayout()
    char_picks_layout.addLayout(self.names_layout1)
    char_picks_layout.addLayout(self.names_layout2)

    self.layout.addWidget(info_label, alignment=Qt.AlignTop)
    self.layout.addLayout(char_picks_layout)
    self.layout.addWidget(interaction_button, alignment=Qt.AlignTop)

def show_interaction(self):
    char_name1 = self.names_button_group1.checkedButton().text()
    char_name2 = self.names_button_group2.checkedButton().text()
    if char_name1 != char_name2:
        self.next_w = Interaction(self.chars, char_name1, char_name2, 1)
        self.next_w.show()
        self.close()
    else:
        self.layout.addWidget(self.same_char_label, alignment=Qt.AlignTop)

```

```

class Questionnaire(QMainWindow):
    def __init__(self, chars: dict, qid: int, input_data: dict, output: bool):
        super().__init__(flags=Qt.Window)
        self.setWindowTitle("Character creation tooling")
        self.chars = chars
        self.qid = qid
        self.input_data = input_data
        self.output = output
        self.layout = QVBoxLayout()

        self.change_name_label = QLabel("This name is not allowed. "
                                         "Please give another name, "
                                         "or add something (in brackets) behind the name to "
                                         "set it apart.")

        self.mandatory_question_label = QLabel("Please provide an answer.")

        if self.output:
            self.char_name_edit = QLineEdit()
            self.generated_output = self.generate_output()
            self.character_summary()
        else:
            self.input_format = QVBoxLayout()
            if self.qid == 0:
                q0_scale = [QRadioButton("Protagonist (main character)"),
                            QRadioButton("Antagonist (opponent / counterpart)"),
                            QRadioButton("Side character")]
                q0_scale[0].setChecked(True)
                self.q0_scale_layout = QVBoxLayout()
                self.q0_scale_button_group = QButtonGroup()
                for i in range(len(q0_scale)):
                    self.q0_scale_layout.addWidget(q0_scale[i], alignment=Qt.AlignTop)
                    self.q0_scale_button_group.addButton(q0_scale[i], i)
            elif self.qid in [1, 5, 6, 7, 8, 9]:
                scale = [QRadioButton("Not at all"),
                        QRadioButton("Not really"),
                        QRadioButton("Undecided"),
                        QRadioButton("Somewhat"),
                        QRadioButton("Very much")]
                self.scale_layout = QHBoxLayout()
                self.scale_button_group = QButtonGroup()
                for i in range(len(scale)):
                    self.scale_layout.addWidget(scale[i], alignment=Qt.AlignTop)
                    self.scale_button_group.addButton(scale[i], i)
            elif self.qid in [3, 4, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21]:
                self.q_le = QLineEdit()
            elif self.qid == 2:

```

```

        self.q2_l1 = QLineEdit()
        self.q2_l1.setPlaceholderText("Central theme / conflict / question")
        self.q2_l2 = QLineEdit()
        self.q2_l2.setPlaceholderText("Characters take / perspective")
    elif self.qid == 15:
        self.q15_c1 = QCheckBox("Integrity")
        self.q15_c2 = QCheckBox("Honesty")
        self.q15_c3 = QCheckBox("Fidelity")
        self.q15_c4 = QCheckBox("Compassion and kindness")
        self.q15_c5 = QCheckBox("Responsibility")
        self.q15_c6 = QCheckBox("Self-discipline")

        self.question_window()
self.layout.addStretch()

widget = QWidget(flags=Qt.Window)
widget.setLayout(self.layout)
scroll = QScrollArea()
scroll.setWidget(widget)
scroll.setWidgetResizable(True)
scroll.setFixedSize(800,400)
self.setCentralWidget(scroll)

def question_window(self):
    self.show_related_input()

    qid_label = QLabel(f"Question: {self.qid + 1}/{max(df_questions['id']) + 1}")
    aspect_label = QLabel("Character aspect: " + df_questions.query(f'id ==
        {self.qid}')["aspect"].iloc[0])
    question_label = QLabel(df_questions.query(f'id ==
        {self.qid}')["question"].iloc[0])

    note_label = QLabel("You are free to continue without providing an answer, "
        "but know that this might reduce the quality of your "
        "character and your story.\n"
        "Also note that answers should be given in English "
        "for the AI model to fully understand you.")

    send_button = QPushButton("Continue")
    send_button.clicked.connect(self.send_answer)

    if self.qid == 0:
        self.input_format.addLayout(self.q0_scale_layout)
    elif self.qid in [1, 5, 6, 7, 8, 9]:
        self.input_format.addLayout(self.scale_layout)
    elif self.qid in [3, 4, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21]:
        self.input_format.addWidget(self.q_le, alignment=Qt.AlignTop)
    elif self.qid == 2:

```

```

        self.input_format.addWidget(self.q2_l1, alignment=Qt.AlignTop)
        self.input_format.addWidget(self.q2_l2, alignment=Qt.AlignTop)
elif self.qid == 15:
    self.input_format.addWidget(self.q15_c1, alignment=Qt.AlignTop)
    self.input_format.addWidget(self.q15_c2, alignment=Qt.AlignTop)
    self.input_format.addWidget(self.q15_c3, alignment=Qt.AlignTop)
    self.input_format.addWidget(self.q15_c4, alignment=Qt.AlignTop)
    self.input_format.addWidget(self.q15_c5, alignment=Qt.AlignTop)
    self.input_format.addWidget(self.q15_c6, alignment=Qt.AlignTop)

self.layout.addWidget(qid_label, alignment=Qt.AlignTop)
self.layout.addWidget(aspect_label, alignment=Qt.AlignTop)
self.layout.addWidget(question_label, alignment=Qt.AlignTop)
self.layout.addLayout(self.input_format)
self.layout.addWidget(note_label, alignment=Qt.AlignTop)
self.layout.addWidget(send_button, alignment=Qt.AlignTop)

def show_related_input(self):
    related_qids = [df_questions.query(f'id == {self.qid}')['related_ids'].iloc[0]]
    if np.nan not in related_qids:
        related_qids = [int(s) for s in related_qids[0].split(',')]
        if bool(set(self.input_data.keys()).intersection(related_qids)):
            info_label = QLabel("The following answers, "
                                "that you gave for previous questions, "
                                "may be relevant for this question:")

            first_a = True
            for related_qid in related_qids:
                if related_qid not in self.input_data.keys():
                    continue
                input_data_q = self.input_data[related_qid]
                question = df_questions.query(f'id ==
                                                {related_qid}')['question'].iloc[0]
                previous_input = f"Your answer to the question '{question}' was
                                  '{input_data_q}'."
                related_q_label = QLabel(previous_input)
                related_q_label.setWordWrap(True)
                if first_a:
                    self.layout.addWidget(info_label, alignment=Qt.AlignTop)
                    self.layout.addWidget(related_q_label, alignment=Qt.AlignTop)
                if first_a:
                    first_a = False
            self.layout.addWidget(QLabel(''), alignment=Qt.AlignTop)

def collect_input(self):
    answer = []
    if self.qid == 0:
        if self.q0_scale_button_group.checkedId() != -1:
            answer.append(self.q0_scale_button_group.checkedButton().text())

```

```

elif self.qid in [1, 5, 6, 7, 8, 9]:
    if self.scale_button_group.checkedId() != -1:
        answer.append(self.scale_button_group.checkedButton().text())
elif self.qid in [3, 4, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21]:
    if self.q_le.text():
        answer.append(self.q_le.text())
elif self.qid == 2:
    if self.q2_l1.text():
        answer.append(self.q2_l1.text())
    if self.q2_l2.text():
        answer.append(self.q2_l2.text())
elif self.qid == 15:
    if self.q15_c1.isChecked():
        answer.append(self.q15_c1.text())
    if self.q15_c2.isChecked():
        answer.append(self.q15_c2.text())
    if self.q15_c3.isChecked():
        answer.append(self.q15_c3.text())
    if self.q15_c4.isChecked():
        answer.append(self.q15_c4.text())
    if self.q15_c5.isChecked():
        answer.append(self.q15_c5.text())
    if self.q15_c6.isChecked():
        answer.append(self.q15_c6.text())
answer = '; '.join(answer)
return answer

def send_answer(self):
    answer = self.collect_input()
    if len(answer) > 0:
        self.input_data[self.qid] = answer
    else:
        self.layout.addWidget(self.mandatory_question_label, alignment=Qt.AlignTop)
    self.next_w = self.analyse_progress()
    self.next_w.show()
    self.close()

def analyse_progress(self):
    if not self.output:
        if self.qid < max(df_questions['id']):
            if self.qid == 0:
                if self.q0_scale_button_group.checkedButton().text() != "Side
                    character":
                    next_w = Questionnaire(self.chars, self.qid+2, self.input_data,
                        self.output)
            else:
                next_w = Questionnaire(self.chars, self.qid+1, self.input_data,
                    self.output)

```



```

        else:
            next_w = Questionnaire(self.chars, self.qid+1, self.input_data,
                                   self.output)
    else:
        self.output = True
        next_w = Questionnaire(self.chars, self.qid, self.input_data,
                               self.output)
    else:
        next_w = HomeScreen(self.chars, False)
    return next_w

def generate_output(self):
    # create input text and add the answers provided by the user
    prompt_command = "Write a coherent, in depth character outline about one
not-yet-existing character with no name. " \
                    "Make the summary as short as possible, " \
                    "and base the character outline solely on the following
                    information:"
    for id in range(max(df_questions['id'])):
        if id not in self.input_data.keys():
            continue
        input_data_q = self.input_data[id]
        if len(input_data_q) != 0:
            question = df_questions.query(f"id == {id}")["question"].iloc[0]
            answer = f"\nThe answer to the question '{question}' is
                    '{input_data_q}'."
            prompt_command += answer

    # LLM model generates output
    response = openai.Completion.create(
        model="text-davinci-003",
        prompt=prompt_command,
        max_tokens=1500,
        temperature=0.8
    )
    output = response['choices'][0]['text']
    print(output)
    return output

def character_summary(self):
    output_label = QLabel(f"The following character summary was generated, based
on your answers:\n"
                        f"{self.generated_output}")
    output_label.setWordWrap(True)
    name_label = QLabel("You can now give the created character a name.")
    interaction_button = QPushButton("Complete created character")
    interaction_button.clicked.connect(self.go_to_menu)

```

```

self.layout.addWidget(output_label, alignment=Qt.AlignTop)
self.layout.addWidget(QLabel(''), alignment=Qt.AlignTop)
self.layout.addWidget(name_label, alignment=Qt.AlignTop)
self.layout.addWidget(self.char_name_edit, alignment=Qt.AlignTop)
self.layout.addWidget(interaction_button, alignment=Qt.AlignTop)

def go_to_menu(self):
    if self.char_name_edit.text() and self.char_name_edit.text() not in
        self.chars.keys():
        if self.char_name_edit.text():
            self.chars[str(self.char_name_edit.text())] = self.generated_output
        else:
            self.chars['No name'] = self.generated_output
    with open(path, "w") as f:
        f.write(json.dumps(self.chars))
    self.next_w = self.analyse_progress()
    self.next_w.show()
    self.close()
else:
    self.layout.addWidget(self.change_name_label, alignment=Qt.AlignTop)

class Interaction(QMainWindow):
    def __init__(self, chars: dict, char_name1: str, char_name2: str, q: int):
        super().__init__(flags=Qt.Window)
        self.setWindowTitle("Character creation tooling")
        self.chars = chars
        self.char_name1 = char_name1
        self.char_name2 = char_name2
        self.q = q
        self.layout = QVBoxLayout()

        question1 = "How does your character's opinion differ from my character's
            opinion, " \
                "concerning the question 'How should you deal with fear?'"
        question2 = "How does your character view my character?"
        question3 = "How does your character interact with my character?\n" \
            "(going in on dialogue, body language, subtext, energy, sarcasm,
                directness, etc.)"
        self.questions = {1: question1, 2: question2, 3: question3}
        self.answered = False

        self.char1_button = QPushButton("Show your character summary")
        self.char1_button.clicked.connect(lambda: self.show_summary(self.char1_button))
        self.char2_button = QPushButton("Show AI's character summary")
        self.char2_button.clicked.connect(lambda: self.show_summary(self.char2_button))

        self.chat_room()

```

```

self.layout.addStretch()

widget = QWidget(flags=Qt.Window)
widget.setLayout(self.layout)
scroll = QScrollArea()
scroll.setWidget(widget)
scroll.setWidgetResizable(True)
scroll.setFixedSize(800,600)
self.setCentralWidget(scroll)

def chat_room(self):
    char2_label = QLabel(f"For this interaction, the AI model will embody the
        character {self.char_name2}.\n"
        f"You will step in the shoes of the character
        {self.char_name1}.")
    char2_label.setWordWrap(True)
    next_q_button = QPushButton("Continue")
    next_q_button.clicked.connect(self.next_question)

    q_user_label = QLabel(f"AI: {self.questions[self.q]}")
    a_user_field = QLineEdit()

    ask_question_button = QPushButton("Ask same question to the AI's character")
    ask_question_button.clicked.connect(self.ai_answer)

    self.layout.addWidget(char2_label, alignment=Qt.AlignTop)
    self.layout.addWidget(self.char1_button, alignment=Qt.AlignTop)
    self.layout.addWidget(self.char2_button, alignment=Qt.AlignTop)
    self.layout.addWidget(next_q_button, alignment=Qt.AlignTop)
    self.layout.addWidget(q_user_label, alignment=Qt.AlignTop)
    self.layout.addWidget(a_user_field, alignment=Qt.AlignTop)
    self.layout.addWidget(ask_question_button, alignment=Qt.AlignTop)

def show_summary(self, btn):
    if btn == self.char1_button:
        self.summary_w = SummaryChar(self.chars[self.char_name1], self.char_name1)
    else:
        self.summary_w = SummaryChar(self.chars[self.char_name2], self.char_name2)
    self.summary_w.show()

def next_question(self):
    if self.q < max(self.questions.keys()):
        self.next_w = Interaction(self.chars, self.char_name1, self.char_name2,
            self.q+1)
        self.next_w.show()
        self.close()
    else:
        self.next_w = HomeScreen(self.chars, False)

```

```

        self.next_w.show()
        self.close()

def generate_answer(self):
    prompt_command = f"If you would be a fictional character with the description
        '{self.chars[self.char_name2]}' " \
        f"and you compare yourself with another character with the
        description '{self.chars[self.char_name1]}', " \
        f"how would you answer the question '{self.questions[self.q]}'?"

    response = openai.Completion.create(
        model="text-davinci-003",
        prompt=prompt_command,
        max_tokens=500,
        temperature=0
    )
    output = response['choices'][0]['text']
    print(output)
    return output

def ai_answer(self):
    if not self.answered:
        a_ai_label = QLabel(self.generate_answer())
        a_ai_label.setWordWrap(True)
        self.layout.addWidget(a_ai_label, alignment=Qt.AlignTop)
        self.answered = True

class SummaryChar(QMainWindow):
    def __init__(self, char_summary: str, char_name: str):
        super().__init__(flags=Qt.Window)
        self.setWindowTitle(f"{char_name}'s Character Summary")
        self.layout = QVBoxLayout()

        summary_label = QLabel(char_summary)
        summary_label.setWordWrap(True)
        self.layout.addWidget(summary_label, alignment=Qt.AlignTop)
        self.layout.addStretch()

        widget = QWidget(flags=Qt.Window)
        widget.setLayout(self.layout)
        scroll = QScrollArea()
        scroll.setWidget(widget)
        scroll.setWidgetResizable(True)
        scroll.setFixedSize(500, 600)
        self.setCentralWidget(scroll)

```

```
# set tooling parameters: OpenAI API-key, start log (empty or test log) and tooling
questions

OPENAI_API_KEY = "sk-xbj4fpp0foarPqAIN6fcT3B1bkFJZGUbh3Cs7inURxLX6a6Z"
openai.api_key = OPENAI_API_KEY

df_questions = pd.read_csv(r"questions.csv", sep=";", encoding="utf-8")

# choose here how you want to start the tooling: an empty log (0) or the test log (1)
char_logs = create_char_logs()
path = char_logs[1]
with open(path, "r") as fr:
    data = fr.read()
char_log = json.loads(data)

app = QApplication(sys.argv)
w = HomeScreen(char_log, False)
w.show()
app.exec()
```
