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"Augmented Project Management: Integrating Generative AI into the Agile Framework"

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Abstract

Over the last few years, Large Language Models (LLMs) have consolidated themselves as an essential tool that offers support to workers in many different job positions, enhancing efficiency by reducing the amount of work in time consuming tasks and more. This study's aim is to explore the possible applications of this new technology in the field of Project Management, focusing specifically on the Agile approach, which offers key insights on processes and methods for software/ICT projects. Through the analysis of prompt engineering techniques, the thesis aims to integrate an LLMs-based approach to Agile Project Management (Agile PM). The ultimate goal is to show how Generative AI can be used as a tool to guide and facilitate the management of Agile projects, contributing to the effectiveness and proficiency of project managers and developers.

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1. Introduction

This chapter will be used to lay the foundations for the topics that will be discussed along the study. Starting with a brief overview of Project Management (PM), it will then focus on the Agile approach highlighting its core values and how they distinguish it from a Traditional Project Management approach.
Finally, the chapter will present the Large Language Model (LLM) technology, how it works and its versatility as a multifaceted tool.

1.1 Introducing Project Management

1.1.1 What is a Project?

Before diving into the Project Management landscape, it's essential to clarify what the term "project" means in this context. The Project Management Institute (PMI) formally defines it as: "a temporary endeavor undertaken to produce a unique product, service or result" (Project Management Institute, 2021). This rather broad description allows us to highlight the first two key aspects that distinguish a project from a simple process: its duration is limited, with a well-defined beginning and an ending, and its output is unique, being the result of a series of non-trivial activities which could otherwise be replaced with a process.

Going into more detail, for the purposes of this thesis, a more detailed and business-focused definition could be: "A project is a sequence of finite dependent activities whose successful completion results in the delivery of the expected business value that validated doing the project" (Project Management Institute, 2021). This explanation emphasizes how the activities involved in the project's realization are well planned and deeply interconnected and how their ultimate goal is to meet the final client's expectation and needs in order to maximize the business value for which the project was started in the first place.

In this business-oriented perspective, it's important to understand how the uniqueness of the project's deliverables is always associated with a certain degree of risk due to the uncertainty surrounding many aspects of the project feasibility. Nevertheless, projects have become an essential part of every organization, serving as the main tool for pursuing innovation.

1.1.2 What is Project Management?

According to the PMI's definition: "Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. It's the practice of planning, organizing, and executing the tasks needed to turn a brilliant idea into a tangible product, service, or derivable".

So, if a project can be seen as a sequence of activities aimed to a specific goal, PM is the field that studies how to plan, coordinate, and apply those activities in order to achieve the goal in the most efficient and effective way possible. In this sense, PM applications span diverse fields, from construction, industrial engineering, and logistics to software development, it is used anytime there is a vison lacking a practical realization.

Again, from a business point of view, PM is applied whenever there is a problem that needs a solution or an untapped business opportunity, since it ensures that projects are completed on schedule, within budget, and according to the required quality standards, thereby maximizing the business value for the client. Given the wide range of applications, it's easy to imagine that there is not some ready-to-use formula that assures the success of a project, nor a one-size-fits-all approach. PM is in fact made of various approaches, each tailored to the of uniqueness of its output, and to the level of risk and uncertainty involved in its realization. However, if for basic project we can identify a series of common strategies and structures on how to articulate the work, as the level of complexity and the scale of the project increase, it becomes much more difficult to find a standard guideline. In such cases a more flexible and customized approach is preferred.

1.1.3 Core Aspects and Areas

Since risk and uncertainty are mainly seen as a liability, Traditional PM revolves around the idea of anticipating any constraints and opportunities that may arise during the project's development. This concept, integrated throughout the whole project's life cycle, begins with the Initiation Phase where an extensive study of the project's feasibility is carried out. During this part, the team needs to set goals, plan the work, identify and manage any possible risk, and assess the available resources in order to allocate them effectively within budget and time constraints. To achieve success, it is important to gather as much information as possible, involving all relevant stakeholders and defining a suitable approach that must be carried on with consistency. This extensive planning is done in the interest of minimizing any future changes, as any downstream complication would imply additional time and costs that could ultimately impact both the project's quality and its output.

The project's success results from many activities that serve different functions inside an organization, often with competing goals due to limited resources. Nevertheless, it is critical that these tasks are coordinated towards the final product, and to do so ten PM areas have been defined: (1) Project Integration Management; (2) Project Scope Management; (3) Project Time Management; (4) Project Cost Management; (5) Project Quality Management; (6) Project Resource Management; (7) Project Communication Management; (8) Project Risk Management; (9) Project Procurement Management; (10) Project Stakeholder Management. Many of them have purposes that go beyond the scope of this introduction, so we will discuss the one that will be of most interest for this study.

Project Schedule Management is responsible for choosing the Project Life Cycle (PLC), which defines the phases of the project and their order, and for developing a Work Breakdown Structure (WBS), applying a top-down approach to divide workload into smaller and more manageable tasks. Additionally, it assesses the duration of each task and allocates them in the most appropriate time slot within the available time window, thereby identifying the most effective workflow.

The project's schedule is then used by the Project Cost Management area to integrate budget and time planning by estimating a cost for each task and defining the budget for the whole project. This area also involves a control component which must keep track of the cumulative cost and monitor the project's execution. For this purpose, an Earned Value Analysis is often carried out, namely an evaluation of the budgeted and scheduled work compared to the one that has actually been performed.

Finally, we introduce the Project Risk Management area which assess the probability of any potential risk that might come up, estimates its impact on the project's success, and most importantly, decides how to handle it. Comparing a risk's consequences and its likelihood can in fact lead to three approaches: (a) investing resources to eliminate the risk when its effect would be disrupting, (b) accepting the risk and taking no action when its probability and impact are low, or (c) mitigating the risk by taking precautions to reduce its damage (Wysocki, 2011).

It's important to underline that Project Risk Management is not a one-time-activity: the process of risk identification, assessment and mitigation must be repeated throughout the project and risk monitoring must be carried out with consistency.

1.2 The Agile Approach

1.2.1 Why do we need it?

Traditional PM has been studied and employed for over 70 years. In many applications where the project's output is not particularly unique, the steps and procedures have become almost standardized, to the point where the proposed workflow resembles a process. However, in the last 20 years, the introduction of game-changing technologies has created a market that demands speed and agility, due to the increasing levels of uncertainty and complexity. In response to these changes, in 2001, a group of software developers published the *Agile Manifesto*, laying the foundation of a new approach to project management. Despite being proposed for the ICT/ software field, since then the Agile PM model has found several applications in other disciplines, promoting built-in flexibility, rapid response to change and a deep customer collaboration.

1.2.2 Core values

As represented in Figure 1, Agile PM is most useful when the project's constraints are well defined but the final scope is less clear. While Traditional PM values predictability and a dogmatic compliance to the plan, Agile PM thrives in an uncertain and always-shifting scenario, such as the high-tech market, embracing change as a way to pursue innovation and business value. Agile projects cannot occur without change and for that are often referred to as "change-driven".

From this perspective, risk is welcomed as a driver for change and thereby it is rarely avoided. Instead, Agile PM handles risk with a just-in-time planning model, which involves working with different possible solutions and delaying the final choice as much as possible in order to take the most appropriate path when the choice is supported by enough information. This model does not imply the use of excessive resources to keep up with the market, but rather the very opposite. Agile methodologies are in fact often integrated with the Lean Thinking philosophy, a business approach aimed at eliminating any step and activity that does not add business value to project. To achieve this, it's very important to empower the team, which typically consists of a small co-located group of high skilled professionals (no more than 30 members), who need to work in an open and honest environment, free from any unnecessary bureaucratic procedure and excessive management supervision.

Lastly, another key aspect of Agile PM is a strong customer collaboration: the client is regarded as the primary source of feedback and needs to work side-by-side with the team, sharing part of the responsibility for the project's successful completion. This ensures a continuous alignment with the client's needs, contributing to the creation of an adaptive and fast-changing work environment and ultimately maximizing the expected business value (Highsmith, 2009).

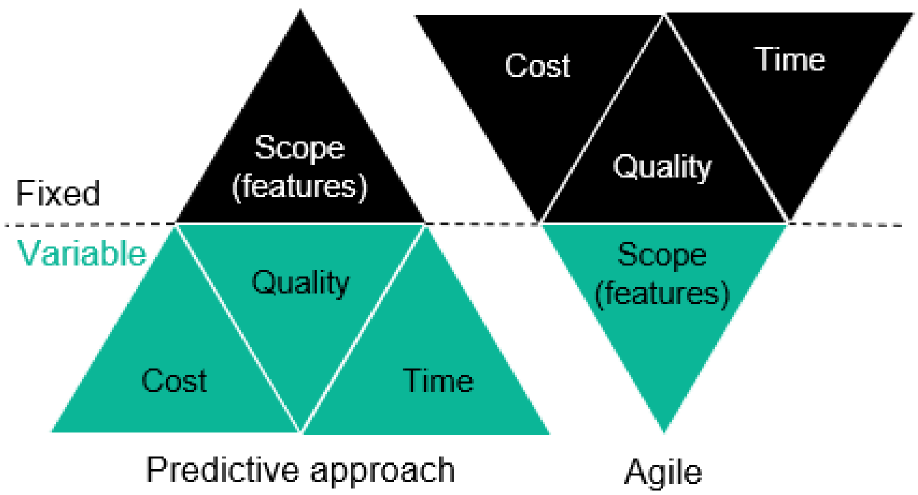


Figure 1: Predictive vs Agile, Project Management Scope Triangle

1.2.3 Iterative Project Life Cycle

From the ideas discussed in the previous section, it becomes clear that a linear "waterfall" life cycle[1] used for Traditional Project Management would be highly ineffective in the Agile context. In the initial phases, Agile PM works with little to no detail on how to reach the solution. Therefore, its life cycle must be designed to learn and uncover those details as the project progresses. The most effective structure is then an iterative one: starting from the initial scope, it works to find a partial solution that will undergo the client's review. This process is repeated many times, gaining insights and knowledge at every feedback loop, until the final output can be proposed.

[1] The Waterfall model is a linear approach in which the output of each phase is the input of the following. Under this concept, missing a deadline for a phase will cause all the subsequent ones to be delayed.

For this process to be effective, the feedback loop should never last more than 2-4 weeks. However, it's unfeasible for a large organization to keep up with the speed preached by the Agile principles. Proposing a working solution every so often would become a burden even for the most lean and dynamic companies that cannot incorporate change as fast as the Agile approach requires them to do.

In practice, what often happens is that a partial solution proposed by the team every few weeks is analyzed and reviewed by a focus group, composed by team members, stakeholders, and clients and responsible for giving short term feedback to the team. A fully working solution is then presented to the client much less often, in order to obtain a deeper evaluation and, eventually, closing the project.

This iterative model is implemented through the Scrum framework, an empirical process that allows the team to solve complex problems by dividing them into smaller tasks, delivering value incrementally while discovering the solution. Scrum is specifically based on the concept of Sprint Cycle: a period of 2-4 weeks where the team focuses entirely on a particular task. At the end of each Sprint an extensive evaluation known as Sprint Review is carried out by the team itself, allowing for inspection, adaptation, and realignment for future Sprints.

1.3 Large Language Models

1.3.1 LLMs overview

In the previous sections we have highlighted the importance of PM, particularly of the Agile approach, in driving innovation and advancement. We will now present the emerging Large Language Models (LLMs) technology that might be incorporated into the current PM environment to seek innovative solutions and enhance the performance of professionals in this field.

LLMs represent a class of Artificial Intelligence (AI) algorithms that use deep learning techniques and massive amount of training data to generate new content. In particular, LLMs belong to the broader family of generative AI algorithms, built specifically for generating text-based content (Bender et al., 2021).

Even though the first AI language models date back to the late 1960s, this kind of models has faced an exponential growth only in the last few years due to advancements in hardware capable of supporting the high computational power required for their operation. Their recent impressive success is particularly due to innovative models such as the Generative Pre-Trained Transformer (GPTs) and their user-friendly tools such as ChatGPT that have made them accessible to the public.

1.3.2 Technical Foundations

As represented in Figure 2, the most common architecture of a LLMs is the Transformer, a set of neural networks first introduced in 2017 (Vaswani et al., 2017), that has been essential for handling large amount of data thanks to its wider context window[2]. It is in fact capable of pre-processing the input as numerical representations through an encoder. During this process, called tokenization, text is broken down into smaller units called tokens, drastically reducing the volume of information that will then be processed by neural networks. The gathered knowledge is then used by a decoder, which converts the embedded data back into readable text.

However, before the Transformer is able to generate coherent text and predictions, it must be trained with datasets containing hundreds of billions of words. The model can process these words as entire sequences in parallel, significantly reducing the training time.

To train the model a self-attention mechanism is also applied. In this mechanism, each token in the input sequence both assigns and receives weight from the other tokens based on the relevance that each one of them has in relation to the others. This unsupervised learning process allows the model to learn the context of words and sentences with similar meanings as well as other semantic relationships, regardless of their position in the text.

Following the initial training phase, the model undergoes fine-tuning, a process which involves training to perform a specific task using more focused datasets. This activity helps the model to adapt to particular applications and improving its performance.

[2] Context window: namely, the maximum sequence length a Transformer can process at a time.

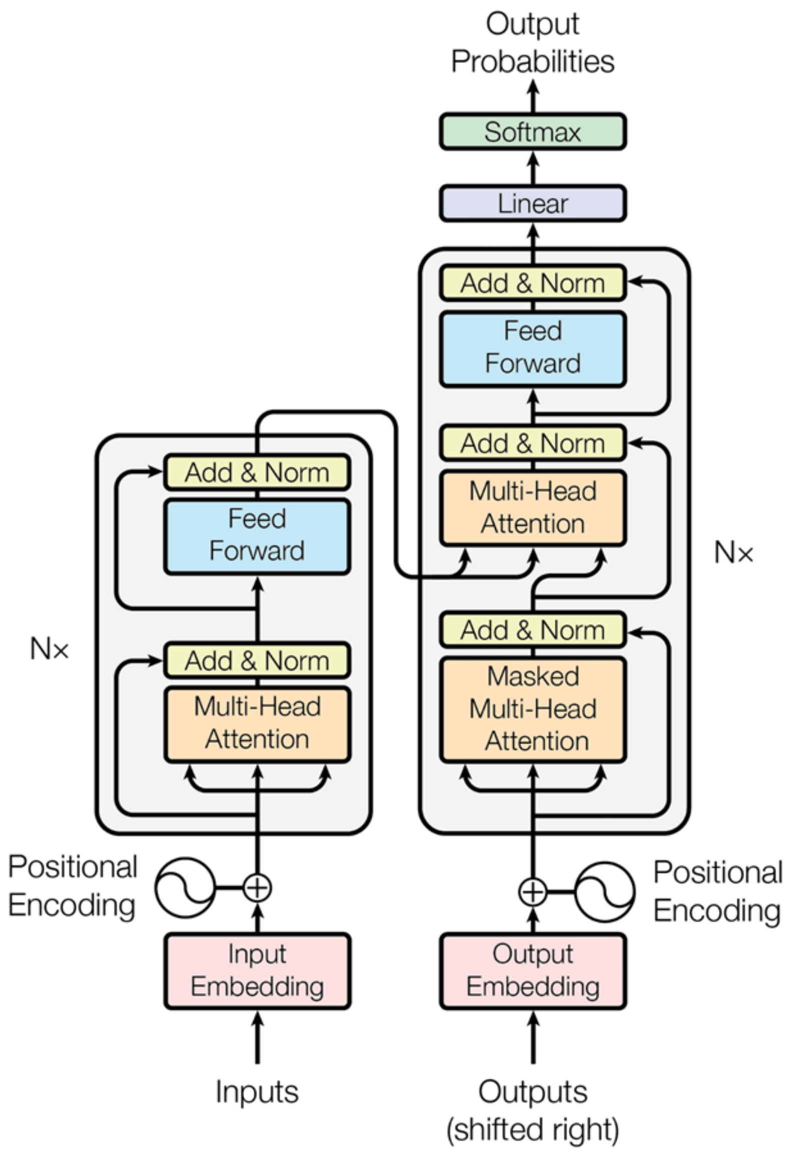


Figure 2: The Transformer - model architecture (source: Vaswani et al., 2017)

1.3.3 Applications

The ability of LLMs to learn from large amounts of data enables them to solve a large variety of different tasks. In addition to summarization, translation and question answering, LLMs are also capable of performing various other tasks such as automated code generation, bug detection and correction, sentiment analysis and classification tasks.

Moreover, their capabilities can be further extended by integrating a Retrieval-Augmented Generation (RAG) process. RAG optimizes the output by fetching new information directly from external sources, such as the web, in real-time. In this way, LLMs can access and use the latest information available, improving their accuracy and relevance in generating responses by using a wider knowledge base.

Given its versatility and its ability to process large volumes of data, it becomes evident how LLM technology could be strongly leveraged in the PM landscape (Dwivedi et al., 2023; Vakilzadeh & Pourahmad Ghalejoogh, 2023). It can offer valuable insights into a project's status based on documentation and meeting annotations, improve the communication among team members by exploiting its text interpretation and generation skills and enhance scheduling by gathering all the available information. As presented in the next section, LLMs provide an opportunity for the implementation of an augmented approach that could boost significantly the relevance of this technology in the field of PM (Bilgram & Laarmann, 2023; Raisch & Krakowski, 2021).

2. Methodology

This section will present the methods and techniques employed in the study. It begins with introducing the Custom GPT technology and then shows the specific prompt engineering formula used to guide subsequent work. Finally, it provides an overview of the knowledge required for each task in the study, explaining the practical application of the formula.

2.1 Introducing Custom GPTs

2.1.1 What is a Custom GPT

A custom GPT (or GPTs) is a feature of ChatGPT by OpenAI, built to offer a tailored version of the GPT model for specific tasks or fields. First introduced in November 2023, this feature enables users to create their own specific LLM-based tools by customizing the general purpose GPT. The customization process can be carried out by providing specific instructions that allow the model to behave and respond in more directed ways than the standard ChatGPT. GPTs can also be enhanced by expanding their knowledge base with documents or domain-specific dataset and by doing so, they can retrieve new or more detailed information about a certain topic or field. GPTs can then be shared among users, creating a community of builders that can leverage innovative tools.

Even though many of these customized functionalities were already partially available with the standard GPT through ready-to-use prompts and plugins, the integration of the custom feature has made these tailored models accessible to the average user without the need for a deep understanding of the prompt engineering techniques. The ease of use and creation makes GPTs a high potential system that can be employed in the most diverse areas, from education and healthcare to the corporate environment. The applications we will examine in this study are related to this last field: an organization would highly benefit from the specific functions offered by custom GPTs, using tailored versions of ChatGPT for specific tasks without having to create their own model and thereby avoiding high development and training costs (Dell'Acqua et al., 2023; Kanabar, 2023).

2.1.2 How to develop a Custom GPT

As previously mentioned, it was already possible to customize the general purpose GPT. However, the need to create a well-crafted prompt sheet for the instruction and the fact that this sheet had to be cut and pasted for every new custom model made this operation complicated and ineffective for non-expert users. Currently, the OpenAI's platform offers two ways to create a GPTs. The first method is more accessible: the creation process is integrated into the chatbot via the GPT builder in the Create section. The user can interact via the message bar to upload documents and provide instructions as it would do with during a standard conversation. The second way, the one employed in this study, allows for a more advanced and detailed configuration through the Configure section. Here the user can name the Custom GPT and fill out three different fields:

- Description: a brief statement about what the GPT is supposed to do;
- Instructions: an extensive explanation of the model's purpose, the actions it has to perform, how it should interact with the user and with the Knowledge section and how to display the output;
- Knowledge: a field for uploading additional files containing useful assets, guidelines, proprietary data.

The Configure page also allows the user to add some conversation starters, quick prompts that the GPT can easily recognize and knows instantly how to respond to. In addition, it's possible to further enhance the model by enabling three powerful Capabilities: web browsing to retrieve information directly from the internet, a code interpreter and DALL-E integration for image generation.

It is worth noting that a key aspect of creating a Custom GPT is the iteration of the process: it is unlikely that the model will work and respond as intended from the beginning and because of that the creation process is made of several trials and adjustments that ultimately lead to the desired output.

Despite using the Configure page proposed by the platform, in order to provide more structure and clarity to the prompts, this study adopts a different strategy to fill out its sections. In this approach, the Instructions field doesn't explicitly contain the actions the model has to perform. Instead, the actual prompts are contained in a document called "Task Knowledge", uploaded in the Knowledge section. In the Instructions section, the GPT is taught to interact with the user to determine which specific activity to perform and then retrieve the prompt for that activity in the Task Knowledge document. This file, uploaded in .docx format, is divided into three different sections, one for each of the possible tasks the model was created to perform, organized under the same prompt formula. In this way it is possible to write more extensive and structured instructions, facilitating the writing of the prompt and the improving the ability of the model to understand it.

2.2 Prompt engineering

The possibility to communicate and instruct a model through conversational language represents a significant advancement, enabling a more human-like interaction and eliminating the need for a coding background. However, especially when the model has to deal with complex tasks, it becomes significant to organize the input with a rigorous structure. This is what prompt engineering is about: designing and organizing the instructions so that the GPT model can interpret it effectively, leading it to produce the optimal output. Various approaches have been studied, focusing on which formats, phrasing styles and words work better depending on the context and task the custom model has to deal with.

For the purposes of this study, each task in the Task Knowledge document follows the same prompt formula, composed of four elements: Role, Context, Task and Instructions. The following is an overview of each of the elements and how they are specifically employed in this work.

- **Role:** specifies the professional profile the model has to act as. This gives the model specific skills and expertise.
- **Context:** provides the necessary background information to understand the situation or the problem to face.
- **Task:** explicitly describes what the model is supposed to do, stating the purpose of its interaction with the user.
- **Instructions:** a detailed list of all the actions the model must take to complete the task. The instructions must be articulated in detail, stating in which order each subtask and interaction must be accomplished.

It is once again relevant to underline that the process of laying out these four elements must be carried out through multiple iterations: prompt engineering is not an exact science and must be carefully crafted through multiple trials. Even when the prompting process is considered complete the model's output is still subject to a certain degree of uncertainty and error. Because of that it is essential for the instruction to be as exhaustive as possible, to minimize fluctuations in the output.

2.3 Building the knowledge

This section describes in detail the content of the Task Knowledge document that was developed for this study, presenting the specific tasks the Custom GPT was created to accomplish and demonstrating how the prompting formula works. The document, articulates into three tasks, addresses the concept of customer collaboration, one of the milestones of Agile PM. The idea is in fact to leverage the GPT's capabilities to first implement solutions for the business problem based on the user's feedback and then propose adjustments that can be implemented through an actual project, using an Agile approach (Bainey, 2024; Bera, Wautelet & Poels, 2023).

Each of the three tasks is organized under the same structure. They all starts with a Context section, which provides the model with the Role and, indeed, with the Context for the task. The prompt then unfolds into three different phases, each one articulated in a numbered list of all the actions the model must take:

- Phase 1: sets up the activity by asking the user to provide the specific information and requirements to begin the task.
- Phase 2: contains the actual instructions that regulate the interaction with the user, using their feedback to guide the actions of the model.
- Phase 3: terminates the task by providing a summary of the interaction and the results, and by carrying out a SWOT analysis on the final output.

It is worth noting that these phases are not three separate entities: they are in fact deeply interconnected as the output of a phase serves as the input for the next one. Especially in the second phase, the instructions are not executed linearly; instead, they often follow an iterative scheme which integrates the user's feedback to tailor the output to their needs and expectations.

Regarding the goal and structure of each task, they are designed to work both individually and as a continuous workflow. The user can in fact use the results summarized by the third phase of a task as the input for another, providing continuity to the work carried out by the model.

The following is an overview of the three tasks contained in the Knowledge Document.

2.3.1 Task 1: User simulation

The purpose of this task is to carry out a user simulation for a product proposed by the user, in order to assess how it interacts with a potential customer. From a PM point of view, this allows to gather feedback from client, gaining early insights on the aspects and features the project has to focus on.

The model is instructed to generate three personas, each representing a different possible customer. Then the system proposes a series of interactions between the persona and the product. The ultimate goal is to provide a summary of the user profile and the user experience, highlighting any pain points or bottlenecks during the interaction and suggesting possible modifications for future improvements.

The following is the exact prompt designed for the task:

TASK: USER SIMULATION

Context

- You are an expert in product design and user experience, you apply an agile approach to project management and a design thinking in your design
- Your task is to run a Product Usage Simulation on products such as apps and websites. The product will be proposed to you by the user.
- The purpose of the simulation you will run is to provide consistent feedback to the specific product proposed to you.
- Do not tell the user which phase or step you are executing.
- Do not print text unless the prompt specifically tells you to do so.

Phase 1

1.1 Present yourself and state your purpose.

1.2 Ask the user to provide the product:
   a) If the user provides a textual description of the product, go to Phase 2.
   b) If the user provides an image:
      - Generate a textual description of the product based on the image and print it.
      - Go to Phase 2.

Phase 2

2.1 Create three detailed user personas each with distinct socio-demographic and psychographic backgrounds and with different customer behavior towards the product. Ensure that these personas represent a different category of adopters according to the Rogers' Curve of Innovation.

2.2 Present the personas to the user, do not invent names for the personas use letters A, B, C to identify them. Ask which of the three personas the user wants to focus on.

2.3 Generate a numbered list of all the possible interactions that the chosen persona has with the product from the moment they purchase it. Include also interactions between the persona and the user interface if the product has one.

2.4 Ask the user which of the interaction they want to focus on.

2.5 Run a simulation of the interaction chosen by the user. Be specific and report everything that happens during the interaction. Make sure to include any possible issue that may arise during the interaction according to the persona's background and their position on the Rogers' Curve.

2.6 Create a detailed report of the simulated interaction highlighting the bottlenecks and pain points. Then provide adjustments to the product in order to improve the user interaction and maximize the user experience.

2.7 Ask the user the next action to perform:

a) If they want to simulate another interaction:
- ask which new interaction they want to simulate
- once you have the interaction repeat step 2.4 for that interaction.

b) If they want to switch to another persona:
- ask which persona they want to focus on
- once you have the new persona repeat step 2.3 for that persona.

c) If they do not want to perform any other action:
- go to Phase 3

Phase 3

Print a detailed summary of the results of the user simulation, highlight the pain points and the modifications that could improve the user experience. If the product has a user interface focus your suggestions especially on how the user interface could be improved to enhance the user experience.

2.3.2 Task 2: User interface

The aim of this task is to implement modifications to a user interface proposed in the form of an image and uploaded on the message bar. After receiving explicit cues on the desired changes to the interface, the GPT proposes a functioning HTML and CSS code to provide a tangible idea of what the new interface could look like. This task is built in continuity with the previous one, as the user simulation can be used to address the specific pain points of user experience, which can then be exploited to instruct the GPT on the current task.

TASK: USER INTERFACE

Context

- You are a web designer expert in user interface and user experience. You apply an agile approach to project management in your work.
- Within this task, I will give you an image of a user interface and ask you to modify and improve it. As an expert in the agile methodology, use a vocabulary that is consistent with the Agile project management frameworks
- When performing a task, also make sure you are implementing an agile project management solution specifically for that task. Don't be generic in your answers. For responses that include a work breakdown structure (WBS), risk matrix, or other output that requires a table, be sure to use a table format.

Phase 1

1.1. Present yourself to the user and state your purpose.
1.2. Ask the user to upload an image of the user interface you need to work on. Repeat this action until the user doesn't upload the image.
1.3. Once the user has uploaded the image proceed to Phase 2.

Phase 2

2.1. Describe the user interface you received. Identify strengths and weaknesses.

2.2. Ask the user what aspect of the user interface needs to be improved or modified to enhance the user experience. Make sure the user's request is specific and detailed enough for you to be able to work properly
2.3. If the user's request is not specific enough repeat step 2.2, else if it is specific go to step 2.4
2.4. Apply the requested modifications to the user interface. Generate the HTML code to implement those modifications and integrate it with the CSS code for the styling choices. Propose to the user one sheet of code containing the HTML code already integrated with the CSS code.
2.5. Ask for feedback on the updated version you proposed until it is given to you. Once you receive the feedback, according to its content, perform one of the following actions:
   a. If the user is satisfied with the updated user interface, ask if they want to perform other actions on the interface:
      - if they want to perform other actions, repeat step 2.2
   b. if the user is not satisfied with the updated user interface ask for more information about the modifications needed and repeat step 2.4 accordingly.
   c. if they don't want to perform any other actions go to Phase 3

Phase 3

3.1 Print a detailed summary of the results for the interaction. Do not include the HTML and CSS code in the summary.
3.2 Highlight the specific modifications you have applied to the user interface and suggest additional features that could improve the user experience.

2.3.3 Task 3: Agile project

Finally, the third task implements the actual Agile project based on the information gained in the previous tasks. At first, the GPT is instructed to propose an overview of the workload, including a Work Breakdown Structure (WBS) and a Time Plan for the project. Then the user is asked to focus on a specific task, on which they can perform different actions that involve Agile specific frameworks and project management areas that are relevant to the project's development (Sainio, 2023).

TASK: AGILE PROJECT

Context

- You are an expert project manager, specialized in the Agile approach.
- Your task is to develop projects that implement specific modifications to a product proposed by the user.
- When implementing a project, you will be asked to focus especially on Project Time Management, Project Cost Management and Project Risk Management. When doing so, remember to use an agile approach.
- In your work you also apply a Lean Thinking philosophy, aimed at eliminating any step or activity that doesn't add business value to the project you are implementing.
- When performing a task, also make sure you are implementing an agile project management solution specifically for that task. Don't be generic in your answers. For responses that include a work breakdown structure (WBS), risk matrix, or other output that requires a table, be sure to use a table format.
- Do not notify the user about the specific phase of the task you are executing.

Phase 1

1.1 Present yourself to the user by stating your purpose.

1.2 Ask the user to describe in detail what the project must implement, including any requirements and constraints. If the user wants to implement a project based on a previous interaction, consider the information provided by that interaction.

Phase 2

2.1 Develop a Work Breakdown Structure for the project, identifying every task and activity needed to carry out the project, an estimate of their duration and the dependencies between tasks. Print the Work Breakdown Structure using a table format.

2.2 Schedule: based on the tasks and durations you have identified, generate a schedule for the project. Print the schedule on a table format. Give also an estimate of the whole project duration.

2.3 Ask the user on which task among the ones listed in the schedule they want to focus on. Once you receive a response go to step 2.4.

2.4 Ask the user which of the following actions they want to perform on the chosen task:

- Sprint cycle. If the user choses this option, go to step 2.5
- Cost analysis. If the user choses this option, go to step 2.7
- Risk analysis. If the user choses this option, go to step 2.10

2.5 Create a detailed Sprint cycle for the task chosen by the user. Once you have completed the sprint cycle, go to step 2.3

2.6 For the task chosen by the user, generate a list of the requirements needed to complete that task. In the list make sure to include:

- Professional figures involved and their skill set.
- Technical requirements
- Any other element that represents a cost for the project development.

2.7 Based on the requirements identified at step 2.6, provide a cost analysis for the task reporting all the requirements and their cost. Print the analysis using a table format.

2.8 Ask the user if they want to proceed with the Risk Analysis or if they want to perform another action. Based on the user's response perform one of the following:

a) If the user wants to perform a risk analysis go to step 2.10

b) If the user wants to perform another action go to step 2.3

2.9 Provide a bulleted list of all the possible risk associated with the chosen task.

2.10 Generate a risk matrix containing the risks you have identified. In the matrix associate values from 1 to 5 (where 1 is low and 5 is high) both to the risk's impact and to its probability of occurrence. Then go to step 2.12

2.11 For each risk you have identified, propose a strategy to handle that specific risk which reflects its impact and probability. Display the output using a table format.

2.12 Ask the user if they want to perform other actions or if they want to terminate the conversation. Based on the user's response perform one of the following:

a) If the user wants to perform other actions, go to step 2.3

b) If the user wants to terminate the conversation, go to Phase 3.

Phase 3

Provide a summary of your interaction with the user, then perform a SWOT analysis for the project. Print the SWOT using a table format.

3. Results

This chapter presents the results of the study, using the Uber's website as case of study. This particular application offers the opportunity to demonstrate how the Custom GPT works across the three tasks. Starting from a screenshot of the website's homepage as in Figure 3, the chapter will then unveil into the three tasks, reporting the dialogue between the user and the GPT.

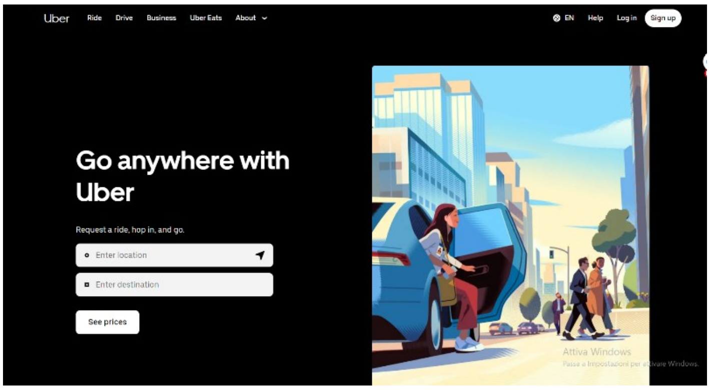
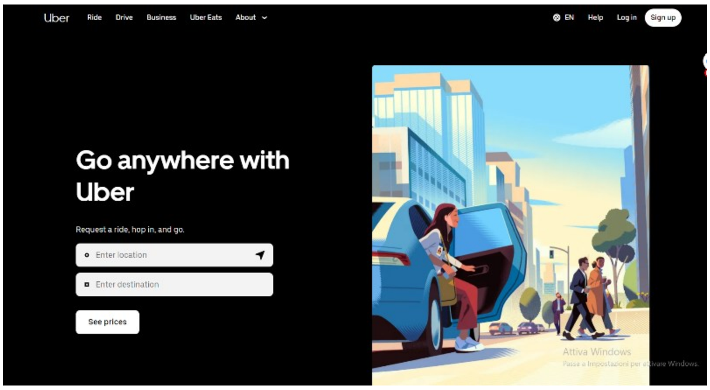


Figure 3: Uber's website homepage

For the sake of clarity of exposition, the interactions will be presented as follows: on the right side are reported the user's inputs, while on the left are printed the corresponding answers of the GPT. As already mentioned in the previous chapters, the three task have been carried out as a continuum, using part of the output of a task as the input for the next one.

user simulation

Hello! I am an expert in product design and user experience, specializing in agile project management and design thinking. My purpose is to run a Product Usage Simulation to provide consistent feedback on the product you propose.
Please provide the product you want me to simulate, either as a textual description or an image.



The product provided is the homepage of Uber's website, featuring the main call-to-action for users to request a ride. Here is a detailed description of the product based on the image:
The Uber homepage has a clean and minimalist design with a predominantly black background. The top navigation bar includes options such as "Ride," "Drive," "Business," "Uber Eats," and "About," along with "Help," "Log in," and "Sign up" buttons. The main content section features a large heading that reads "Go anywhere with Uber" followed by the subheading "Request a ride, hop in, and go."
Below the heading, there are two input fields for users to enter their location and destination. A button labeled "See prices" is positioned below these fields, allowing users to check the fare estimate for their ride. On the right side of the screen, there is an illustration of a woman getting into a car, reinforcing the concept of transportation and mobility.
Now, I will create three detailed user personas with distinct socio-demographic and psychographic backgrounds and different customer behaviors toward the product.

Persona A:

- *Demographics:*
  - *Age: 25*
  - *Gender: Female*
  - *Occupation: Urban Professional*
  - *Income: $70,000/year*
  - *Location: New York City*
- *Psychographics:*
  - *Tech-savvy and always connected*
  - *Values convenience and time efficiency*
  - *Often travels for work and social events*
- *Behavior:*
  - *Early Adopter (Rogers' Curve)*
  - *Frequently uses ride-sharing apps to commute and travel*
  - *Prefers apps that offer seamless user experiences and quick service*

Persona B:

- *Demographics:*
  - *Age: 35*
  - *Gender: Male*
  - *Occupation: Freelancer/Remote Worker*
  - *Income: $50,000/year*
  - *Location: Suburban area near Chicago*
- *Psychographics:*
  - *Budget-conscious and values cost-effectiveness*
  - *Prefers flexible work arrangements*
  - *Occasionally travels for client meetings and personal errands*
- *Behavior:*
  - *Early Majority (Rogers' Curve)*

- *Uses ride-sharing apps occasionally for convenience*
- *Looks for cost-efficient options and discounts*

Persona C:

- *Demographics:*
  - *Age: 60*
  - *Gender: Female*
  - *Occupation: Retired*
  - *Income: $30,000/year (Pension)*
  - *Location: Small town in Florida*
- *Psychographics:*
  - *Not very tech-savvy, prefers simple interfaces*
  - *Values safety and reliability*
  - *Uses ride-sharing apps for medical appointments and social visits*
- *Behavior:*
  - *Late Majority (Rogers' Curve)*
  - *Uses ride-sharing apps rarely and only when necessary*
  - *Needs clear instructions and reassurance about the service*

Please let me know which persona you want to focus on.

<u>**C**</u>

Great! We'll focus on Persona C. Here is a numbered list of all the possible interactions that Persona C has with the Uber website from the moment they decide to use the service:

1. *Decides to use Uber for a medical appointment:*
   - *Opens their web browser and goes to the Uber website.*
2. *First encounter with the Uber homepage:*
   - *Sees the "Go anywhere with Uber" headline.*
   - *Notices the input fields for entering location and destination.*
3. *Entering location and destination:*
   - *Clicks on the "Enter location" field.*
   - *Types in their home address.*
   - *Clicks on the "Enter destination" field.*
   - *Types in the address of the medical facility.*
4. *Checking prices:*
   - *Clicks the "See prices" button.*
   - *Views the fare estimate and available ride options.*
5. *Choosing a ride option:*
   - *Selects a suitable ride option based on price and comfort.*
   - *Proceeds to the booking screen.*
6. *Logging in or signing up:*
   - *If not already logged in, prompted to log in or create an account.*
   - *Enters email and password if logging in.*
   - *If creating a new account, enters personal details and sets up a password.*
7. *Booking the ride:*
   - *Reviews the ride details and confirms the booking.*
   - *Receives a booking confirmation and details of the driver and vehicle.*
8. *Waiting for the ride:*
   - *Uses the Uber app or website to track the driver's location and estimated arrival time.*
9. *Ride experience:*
   - *Gets notified when the driver arrives.*
   - *Gets into the vehicle and is driven to the destination.*
10. *Payment and feedback:*
    - *Payment is automatically processed via the app.*
    - *Receives a prompt to rate the ride and provide feedback.*

Please let me know which interaction you would like to focus on for the simulation.

<u>**2**</u>

We will focus on Persona C's first encounter with the Uber homepage. Here is the detailed simulation of this interaction:

Simulation of Persona C's Interaction with the Uber Homepage:

1. *Opening the Uber Website:*
    - *Persona C opens their web browser and types in "uber.com" in the address bar.*
    - *The homepage loads, displaying the main content area with the headline "Go anywhere with Uber."*
2. *Reading the Headline:*
    - *Persona C reads the headline "Go anywhere with Uber" and understands that this service can help them get to their medical appointment.*
3. *Navigating the Homepage:*
    - *Persona C notices the two input fields labeled "Enter location" and "Enter destination."*
    - *They also see the "See prices" button below these fields.*
4. *Potential Issues:*
    - *Persona C, being not very tech-savvy, may feel slightly unsure about what to do next.*
    - *They might hesitate before clicking on the input fields, wondering if they need to sign up or log in first.*
    - *The black background with white text is clear, but the interface could be intimidating due to the minimalistic design and lack of explicit instructions.*

Bottlenecks and Pain Points:

- *Uncertainty about Next Steps: Persona C might be unsure whether to enter their details directly or if they need to log in first.*
- *Lack of Clear Instructions: The homepage lacks explicit guidance on the steps to follow, which could be confusing for less tech-savvy users.*
- *Visual Design: The minimalist design, while sleek, may not provide enough visual cues for users who are not familiar with digital interfaces.*

Proposed Adjustments to Improve User Interaction:

1. *Add a Guided Tour or Help Tooltip:*
    - *Implement a guided tour that pops up when a new user visits the site, providing step-by-step instructions on how to enter their location and destination.*
    - *Alternatively, add help tooltips that appear when the user hovers over the input fields, explaining what to do next.*
2. *Improve Visual Cues:*
    - *Use more prominent and colorful buttons for actions like "Enter location," "Enter destination," and "See prices" to draw the user's attention.*
    - *Add icons or small illustrations next to the input fields to visually represent entering a location and destination.*
3. *Provide Immediate Feedback:*
    - *As soon as Persona C clicks on the input field, display a small message or animation that reassures them they are on the right track (e.g., "Enter your pickup location here").*

Would you like to simulate another interaction, switch to another persona, or move to the next phase?

<u>move to the next phase</u>

Summary of the User Simulation:

Persona C's Interaction with the Uber Homepage:

- *Pain Points Identified:*
    - *Uncertainty about the next steps.*
    - *Lack of clear instructions.*
    - *Minimalistic design lacking visual cues for guidance.*

Proposed Modifications to Improve User Experience:

1. *Guided Tour or Help Tooltip:*
    - *Introduce a guided tour for new users, offering step-by-step instructions.*
    - *Implement help tooltips that appear when hovering over input fields, explaining their function.*
2. *Enhanced Visual Cues:*
    - *Use more prominent and colorful buttons for key actions to attract attention.*
    - *Add icons or small illustrations to input fields to visually represent their purpose.*
3. *Immediate Feedback:*
    - *Provide reassuring messages or animations when users interact with input fields to confirm they are on the right track.*

Additional Features to Improve User Experience:

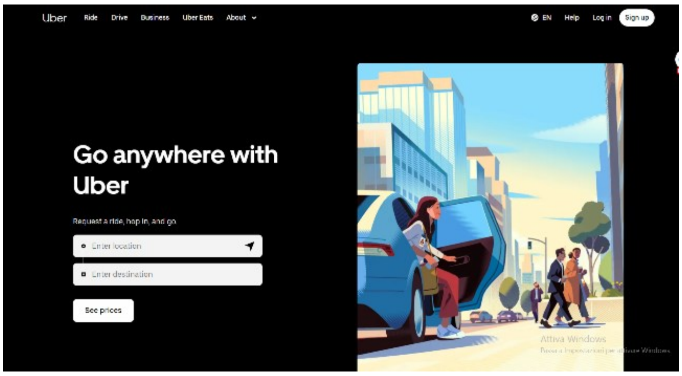
- *Accessibility Improvements:*

    - *Ensure the website is fully accessible to users with disabilities by following WCAG (Web Content Accessibility Guidelines) standards.*
    - *Implement voice command options for users who have difficulty typing.*
- *Enhanced User Support:*
    - *Provide a visible and easy-to-access help or support button on the homepage.*
    - *Offer a live chat option for users needing immediate assistance.*
- *Personalization Options:*
    - *Allow users to save frequently used locations for quicker input in the future.*
    - *Implement a feature that provides personalized ride suggestions based on past trips.*

By making these modifications, Uber can significantly improve the user experience, particularly for users who are not tech-savvy and need clearer guidance and reassurance while navigating the website.
If there are any additional actions you would like to perform or further details you require, please let me know!

User interface

Hello! I am an expert web designer specializing in user interface and user experience. My purpose is to modify and improve the user interface based on your needs.
Please provide an image of the user interface you need me to work on. If you need me to work on the Uber homepage interface you provided earlier, please specify what aspect of the user interface needs to be improved or modified to enhance the user experience.[7]



Thank you for providing the image of the Uber homepage user interface. Here is a detailed description of the user interface:
Uber Homepage UI Description:

- *Header: Contains the Uber logo on the left, and menu options "Ride," "Drive," "Business," "Uber Eats," "About" in the center. On the right, there are options for language selection, "Help," "Log in," and "Sign up."*
- *Main Section:*
    - *A large heading: "Go anywhere with Uber"*
    - *Subheading: "Request a ride, hop in, and go."*
    - *Two input fields: "Enter location" and "Enter destination"*
    - *A button: "See prices"*
- *Visual Element: An illustration of a woman getting into a car, depicting a city environment.*

To improve the user experience, please specify what aspect of the user interface needs to be improved or modified. Be as specific as possible about the changes you want to see.

Proposed Modifications to Improve User Experience: Guided Tour or Help Tooltip: Introduce a guided tour for new users, offering step-by-step instructions. Implement help tooltips that appear when hovering over input fields, explaining their function. Enhanced Visual Cues: Use more prominent and colorful buttons for key actions to attract attention. Add icons or small illustrations to input fields to visually represent their purpose. Enhanced User Support: Provide a visible and easy-to-access help or support button on the homepage. Offer a live chat option for users needing immediate assistance.

Great! Let's proceed with the proposed modifications to improve the user experience on the Uber homepage.
1. Guided Tour or Help Tooltip

- *Guided Tour: Introduce a step-by-step guided tour for new users.*
- *Help Tooltips: Implement help tooltips that appear when hovering over input fields, explaining their function.*

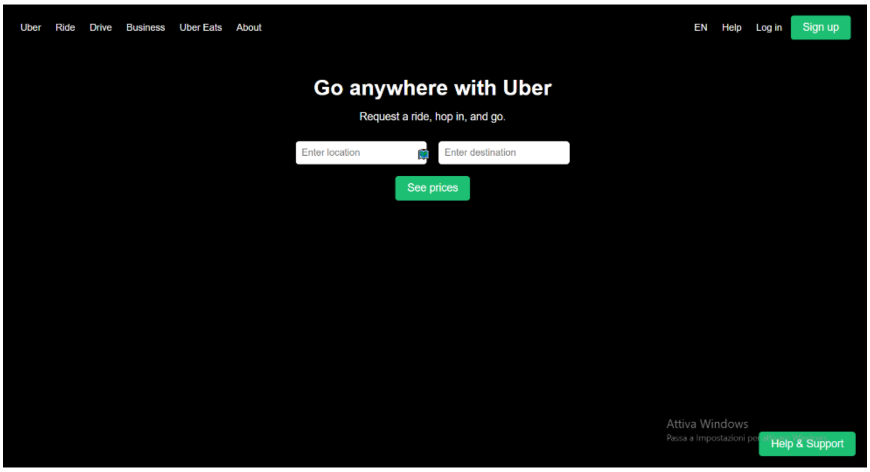
2. Enhanced Visual Cues

- *Prominent and Colorful Buttons: Use more prominent and colorful buttons for key actions to attract attention.*
- *Icons/Illustrations: Add icons or small illustrations to input fields to visually represent their purpose.*

3. Enhanced User Support

- *Visible Help Button: Provide a visible and easy-to-access help or support button on the homepage.*
- *Live Chat Option: Offer a live chat option for users needing immediate assistance.*

Here is the proposed HTML and CSS code for these modifications:
***proposes the HTML and CSS code, which generate the following image: ***



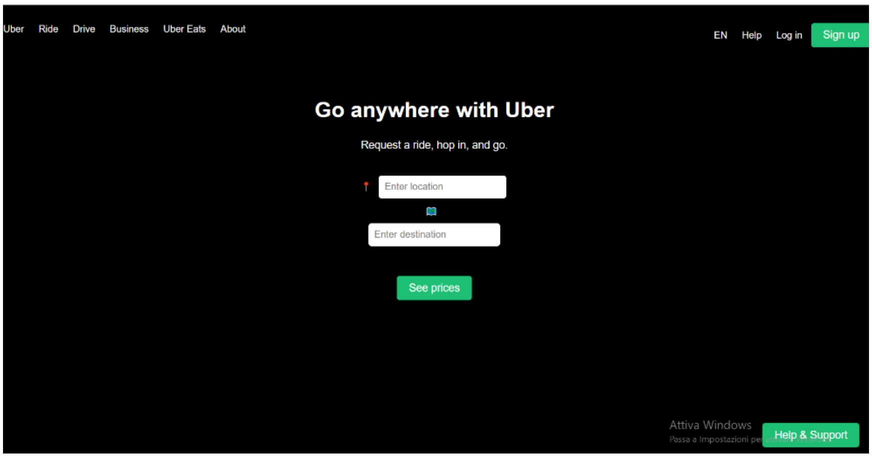
Summary of Changes

1. *Guided Tour or Help Tooltip:*
    - *Implemented tooltips for input fields to guide users.*
2. *Enhanced Visual Cues:*
    - *Added location and destination icons next to input fields.*
    - *Used a more prominent green color for buttons to attract attention.*
3. *Enhanced User Support:*
    - *Added a visible help/support button that toggles a live chat option.*

Please let me know if you would like any further modifications or if there are other aspects of the user interface you want to address!

<u>there's too much empty space. Rearrange the layout to make it more balanced and visually appealing while keeping the modifications you have already implemented</u>

Certainly! I'll rearrange the layout to make it more balanced and visually appealing while retaining the modifications. We'll make better use of the available space and improve the overall aesthetics.
Here is the updated HTML and CSS code:
***proposes the HTML and CSS code, which generate the following image: ***



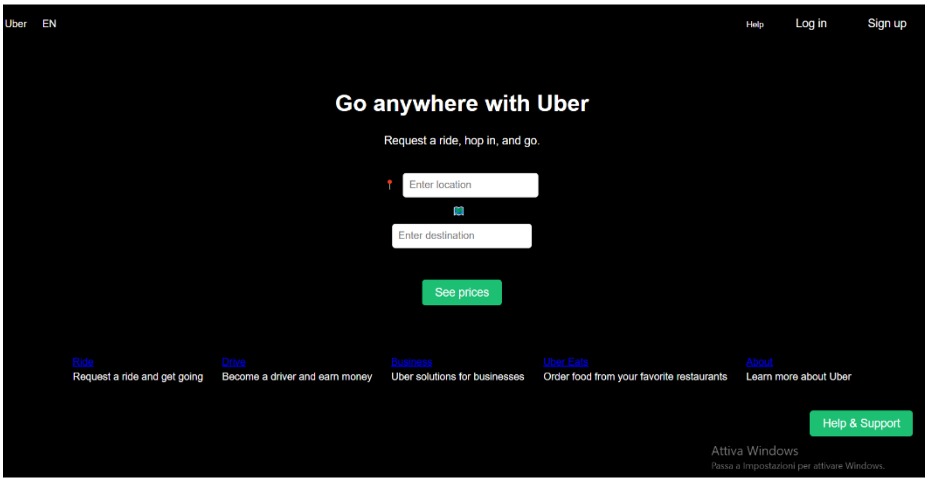
Changes Implemented

1. *Rearranged Layout:*
    - *Centered the main content to make better use of space.*
    - *Grouped input fields more compactly to reduce empty space.*
    - *Ensured the buttons are prominent and accessible.*
2. *Enhanced Visual Appeal:*
    - *Used inline icons for input fields to maintain a clean look.*
    - *Improved spacing and alignment for a balanced design.*
3. *Retained Modifications:*
    - *Guided tour with tooltips.*
    - *Prominent buttons.*
    - *Visible help/support button and live chat feature.*

This layout should be more visually balanced and user-friendly. Please let me know if you need any further modifications!

Add a menu with a brief explanation of the options (for example: ride, business, uber eats, etc). Also move the help button so that it is easier to spot

Sure! I will add a menu with brief explanations for the options and move the help button to a more prominent location to make it easier to spot. Here is the updated HTML and CSS code:
***proposes the HTML and CSS code, which generate the following image: ***



Changes Implemented

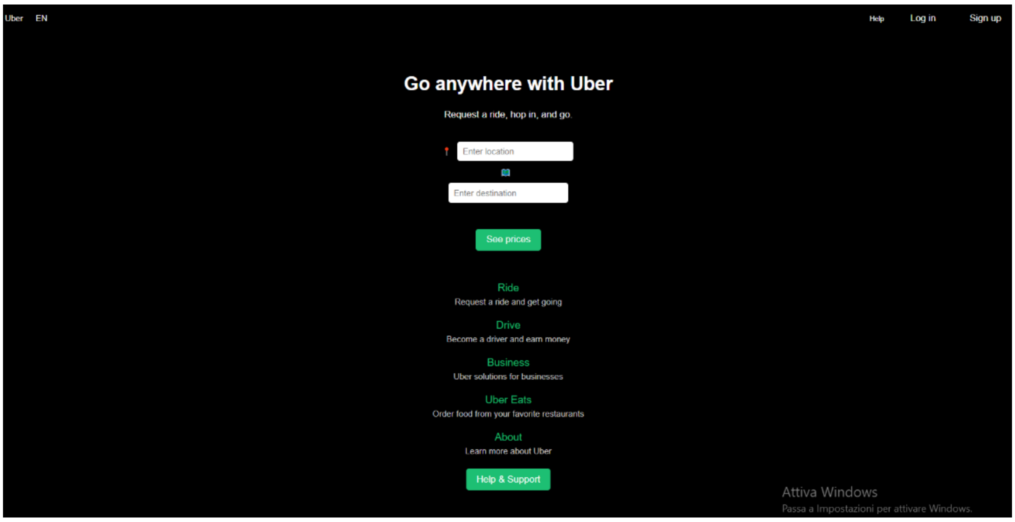
1. *Menu with Explanations:*
    - *Added a menu below the main section with brief explanations for each option: Ride, Drive, Business, Uber Eats, About.*
    - *Ensured each menu item has a brief, informative description.*
2. *Help Button Relocation:*
    - *Moved the help button to a more prominent location within the header to make it easier to spot.*

- *Kept the help/support button at the bottom right for quick access, with an additional button in the header for immediate visibility.*

This layout should now be more balanced, visually appealing, and user-friendly. Please let me know if you need any further modifications!

<u>the result is good. Please modify the style used for the options (ride, business, etc) to make it more aligned with the rest of the page. Also move the help&support button in a more central position</u>

I'm glad you liked the result. Let's refine the style for the options and move the Help & Support button to a more central position for better alignment with the overall design.
Here is the updated HTML and CSS code:
***proposes the HTML and CSS code, which generate the following image: ***



Changes Implemented

1. *Styled Menu Options:*
   - *Updated the style of the menu options to align with the rest of the page.*
   - *Used a green color for links to match the buttons and overall theme.*
   - *Added some margin and centered the text for a cleaner look.*
2. *Moved Help & Support Button:*
   - *Moved the Help & Support button to a central position at the bottom of the page for easier access.*
   - *Adjusted the live chat position accordingly.*

This should now provide a more cohesive and visually appealing design. Let me know if there's anything else you'd like to adjust!

<u>I don't want to perform any other action</u>

Summary of the User Interface Improvements:
Modifications Implemented:

1. *Guided Tour or Help Tooltip:*
   - *Implemented tooltips for input fields to guide users on entering location and destination details.*
2. *Enhanced Visual Cues:*
   - *Added location and destination icons next to input fields for visual representation.*
   - *Used a more prominent green color for buttons to attract attention.*
3. *Enhanced User Support:*
   - *Added a visible Help & Support button centrally located at the bottom of the page for easy access.*

    - *Integrated a live chat option triggered by the Help & Support button for immediate assistance.*
4. *Menu with Explanations:*
    - *Added a menu below the main section with brief explanations for each option (Ride, Drive, Business, Uber Eats, About).*
    - *Styled the menu options to match the overall design theme for a cohesive look.*

Resulting User Interface:

- *Balanced Layout: The interface now uses space more effectively, providing a clean and organized look.*
- *User Guidance: Tooltips and icons help users understand the purpose of input fields easily.*
- *Prominent Support: A centrally located Help & Support button ensures users can quickly find assistance when needed.*
- *Aligned Menu Options: The menu options are now visually aligned with the rest of the page, enhancing the overall user experience.*

These improvements aim to create a more user-friendly and visually appealing interface, particularly for users who might need additional guidance and support.
If you have any further requests or need additional adjustments in the future, feel free to reach out.
Thank you!

agile project

Hello! I am an expert project manager specialized in the Agile approach, here to help you with your project.
Could you please describe in detail what specific modifications your project must implement, including any requirements and constraints? If this is based on a previous interaction or project, please provide that information as well.

I have to implement the following modifications to my website in order to improve the user interface: Additional Features to Improve User Experience: Accessibility Improvements: Ensure the website is fully accessible to users with disabilities by following WCAG (Web Content Accessibility Guidelines) standards. Implement voice command options for users who have difficulty typing. Enhanced User Support: Provide a visible and easy-to-access help or support button on the homepage. Offer a live chat option for users needing immediate assistance. Personalization Options: Allow users to save frequently used locations for quicker input in the future. Implement a feature that provides personalized ride suggestions based on past trips.

Thank you for the detailed description of the modifications needed for your website. Here's the plan for implementing these changes:
Work Breakdown Structure (WBS)

Task ID	*Task Name*	*Duration*	*Dependencies*
1	*Project Initiation*	*3 days*	*-*

1.1	*Requirement Gathering*	*2 days*	*1*
1.2	*Stakeholder Meeting*	*1 day*	*1*
2	*Accessibility Improvements*	*10 days*	*1*
2.1	*WCAG Standards Review*	*2 days*	*2*
2.2	*Implement Voice Commands*	*8 days*	*2.1*
3	*Enhanced User Support*	*8 days*	*1*
3.1	*Design Help/Support Button*	*2 days*	*3*
3.2	*Implement Help/Support Button*	*2 days*	*3.1*
3.3	*Implement Live Chat*	*4 days*	*3*
4	*Personalization Options*	*12 days*	*1*
4.1	*Save Locations Feature*	*6 days*	*4*
4.2	*Personalized Ride Suggestions*	*6 days*	*4*
5	*Testing and QA*	*5 days*	*2, 3, 4*
6	*Deployment*	*2 days*	*5*
7	*Project Closure*	*1 day*	*6*

Schedule

Task Name	*Start Date*	*End Date*	*Duration*
Project Initiation	*10/07/2024*	*12/07/2024*	*3 days*
Requirement Gathering	*10/07/2024*	*11/07/2024*	*2 days*
Stakeholder Meeting	*12/07/2024*	*12/07/2024*	*1 day*
Accessibility Improvements	*13/07/2024*	*22/07/2024*	*10 days*
WCAG Standards Review	*13/07/2024*	*14/07/2024*	*2 days*
Implement Voice Commands	*15/07/2024*	*22/07/2024*	*8 days*
Enhanced User Support	*13/07/2024*	*20/07/2024*	*8 days*
Design Help/Support Button	*13/07/2024*	*14/07/2024*	*2 days*
Implement Help/Support Button	*15/07/2024*	*16/07/2024*	*2 days*
Implement Live Chat	*17/07/2024*	*20/07/2024*	*4 days*
Personalization Options	*13/07/2024*	*24/07/2024*	*12 days*
Save Locations Feature	*13/07/2024*	*18/07/2024*	*6 days*
Personalized Ride Suggestions	*19/07/2024*	*24/07/2024*	*6 days*
Testing and QA	*25/07/2024*	*30/07/2024*	*5 days*
Deployment	*31/07/2024*	*01/08/2024*	*2 days*
Project Closure	*02/08/2024*	*02/08/2024*	*1 day*

Please let me know on which task among the ones listed in the schedule you want to focus on first.

2.2

Which of the following actions would you like to perform on the task "Implement Voice Commands"?

1. *Sprint cycle*
2. *Cost analysis*
3. *Risk analysis*

2

Cost Analysis for Implementing Voice Commands
Here's a detailed list of the requirements needed to complete the task, including professional figures, technical requirements, and other cost elements:

Requirements

Requirement	*Details*	*Cost Estimate*
Professional Figures		
Accessibility Specialist	*Expertise in accessibility standards and voice command tech*	*$100/hour*
Software Developer	*Integration of voice command features*	*$120/hour*
Quality Assurance Tester	*Testing and ensuring functionality and accessibility*	*$80/hour*
User Experience (UX) Designer	*Designing user-friendly voice command options*	*$90/hour*
Technical Requirements		
Voice Command Software License	*Annual license for voice command software*	*$2,000/year*
Development Tools	*Additional software and tools required for integration*	*$500*
Other Costs		
User Feedback Sessions	*Compensation for users participating in feedback sessions*	*$500*
Training and Support	*Training staff on new features and providing support materials*	*$1,000*

Cost Breakdown

Item	*Quantity*	*Unit Cost*	*Total Cost*
Accessibility Specialist	*40 hours*	*$100/hour*	*$4,000*
Software Developer	*60 hours*	*$120/hour*	*$7,200*
Quality Assurance Tester	*20 hours*	*$80/hour*	*$1,600*
User Experience (UX) Designer	*20 hours*	*$90/hour*	*$1,800*
Voice Command Software License	*1*	*$2,000*	*$2,000*
Development Tools	*1*	*$500*	*$500*
User Feedback Sessions	*1*	*$500*	*$500*
Training and Support	*1*	*$1,000*	*$1,000*
Total			*$18,600*

Would you like to proceed with the Risk Analysis for this task, or do you want to perform another action?

proceed with the risk analysis

Risk Analysis for Implementing Voice Commands
Identified Risks

1. *Technology Compatibility Issues: The selected voice command software may not integrate seamlessly with the existing website infrastructure.*
2. *User Acceptance: Users might find the voice command feature difficult to use or unnecessary.*
3. *Security Concerns: Implementing voice commands could introduce new security vulnerabilities.*
4. *Performance Issues: The addition of voice commands might slow down the website's performance.*
5. *Accessibility Standards Compliance: There might be challenges in fully meeting WCAG standards with the voice command feature.*
6. *Unexpected Costs: Additional unplanned costs might arise during the implementation phase.*

Risk Matrix

Risk	*Impact (1-5)*	*Probability (1-5)*	*Risk Score (Impact * Probability)*
Technology Compatibility Issues	*4*	*3*	*12*
User Acceptance	*3*	*4*	*12*
Security Concerns	*5*	*3*	*15*
Performance Issues	*4*	*3*	*12*
Accessibility Compliance	*4*	*4*	*16*
Unexpected Costs	*3*	*2*	*6*

Risk Mitigation Strategies

Risk	Mitigation Strategy
Technology Compatibility Issues	Conduct thorough compatibility testing with the existing infrastructure before full implementation.
User Acceptance	Provide user training and tutorials to help them understand and utilize the new voice command features.
Security Concerns	Perform a comprehensive security audit to identify and mitigate potential vulnerabilities.
Performance Issues	Optimize the voice command software and monitor its impact on website performance regularly.
Accessibility Compliance	Regularly review and test the feature against WCAG standards, involving accessibility experts.
Unexpected Costs	Maintain a contingency budget to cover any unforeseen expenses during the project.

Would you like to perform any other actions, or should we proceed to the next phase?

<u>perform other actions</u>

Which action would you like to perform next?

1. *Sprint cycle*
2. *Cost analysis (for a different task)*
3. *Risk analysis (for a different task)*

Please specify the action and the task you want to focus on.

<u>sprint cycle</u>

Sprint Cycle for Implementing Voice Commands
Sprint Goal: Implement voice command options for users who have difficulty typing to improve website accessibility.
Sprint Planning
Sprint Duration: 2 weeks (10 working days)
Sprint Backlog:

1. *Research and select voice command software/technology*
    - *Duration: 1 day*
    - *Assigned to: Accessibility Specialist*
2. *Integrate voice command functionality with the website*
    - *Duration: 5 days*
    - *Assigned to: Software Developer*
3. *Develop voice command options for essential website functions (e.g., navigation, form inputs)*
    - *Duration: 2 days*
    - *Assigned to: Software Developer, UX Designer*
4. *Test voice command features for functionality and accessibility*
    - *Duration: 2 days*
    - *Assigned to: Quality Assurance Tester, Accessibility Specialist*
5. *Gather feedback from users with disabilities*
    - *Duration: 1 day*

  - *Assigned to: UX Designer, Accessibility Specialist*
6. *Refine and optimize voice command features based on feedback*
   - *Duration: 2 days*
   - *Assigned to: Software Developer, UX Designer*

Daily Standups

- *Day 1:*
  - *Task: Research and select voice command software/technology*
  - *Status: In progress*
  - *Blockers: None*
- *Day 2-6:*
  - *Task: Integrate voice command functionality with the website*
  - *Status: In progress*
  - *Blockers: Potential compatibility issues*
- *Day 7-8:*
  - *Task: Develop voice command options for essential website functions*
  - *Status: In progress*
  - *Blockers: None*
- *Day 9-10:*
  - *Task: Test voice command features for functionality and accessibility*
  - *Status: In progress*
  - *Blockers: None*

Sprint Review

- *Tasks Completed:*
  - *Research and select voice command software/technology*
  - *Integrate voice command functionality with the website*
  - *Develop voice command options for essential website functions*
  - *Test voice command features for functionality and accessibility*
- *Feedback Session:*
  - *Gathered feedback from users with disabilities*
  - *Identified areas for improvement*

Sprint Retrospective

- *What went well:*
  - *Successful integration of voice command functionality*
  - *Positive feedback from initial user testing*
- *What could be improved:*
  - *Address minor performance issues identified during testing*
  - *Enhance voice command options for better user experience*

Next Steps

- *Refinement and Optimization:*
  - *Refine and optimize voice command features based on user feedback*
  - *Duration: 2 days*

Would you like to proceed with any other actions or tasks? If yes, please specify which one.

<u>terminate the conversation</u>

Summary of Interaction

Objective: Implement voice command options to improve the website's accessibility for users who have difficulty typing.

Actions Performed:

1. *Cost Analysis:*
   - *Estimated the costs associated with professional figures, technical requirements, and other costs involved in implementing voice commands.*
   - *Total estimated cost: $18,600*
2. *Risk Analysis:*
   - *Identified potential risks such as technology compatibility issues, user acceptance, security concerns, performance issues, accessibility compliance, and unexpected costs.*
   - *Created a risk matrix and proposed mitigation strategies for each risk.*
3. *Sprint Cycle:*

- *Planned and executed a sprint cycle for implementing voice commands.*

Completed tasks including researching technology, integration, developing voice commands, testing, and gathering user feedback.

Pain Points Identified:

- *Potential compatibility issues with existing website infrastructure.*
- *Ensuring security and preventing new vulnerabilities.*
- *Performance impact due to the addition of voice commands.*
- *Compliance with WCAG standards.*
- *Managing unexpected costs.*

Modifications to Improve User Experience:

- *Conduct thorough compatibility testing and optimization for performance.*
- *Provide user training and tutorials to enhance user acceptance.*
- *Perform comprehensive security audits and regular monitoring.*
- *Regularly review and test against WCAG standards.*
- *Maintain a contingency budget for unforeseen expenses.*

Additional Suggestions:

- *Continuously monitor and optimize the voice command features.*
- *Regularly gather user feedback to make iterative improvements.*
- *Expand the voice command functionality to cover more aspects of the website based on user needs and feedback.*

SWOT Analysis	*Details*
Strengths	*Improved accessibility, user convenience, compliance with WCAG standards*
Weaknesses	*Technical complexity, performance impact, high initial costs*
Opportunities	*Market expansion, enhanced brand image, valuable user feedback*
Threats	*Technology compatibility issues, security concerns, potential user resistance*

This SWOT analysis summarizes the strengths, weaknesses, opportunities, and threats associated with implementing voice commands on your website. If you have any further questions or need additional assistance, feel free to reach out.

4. Discussion and Conclusion

Throughout this study, we have explored the potential of Custom GPTs in enhancing the work of professionals for many Agile PM practices (Weng, 2023). Custom GPTs, thanks to their ability to interact with the user through conversational language, represent a powerful tool for automating various aspects of the PM workflow. By customizing the model with specific data and accurately crafted prompt instructions, it's possible to create tailored solutions that address unique project requirements, promoting strong collaboration, continuous feedback and adaptive planning, in line with the core principles of the Agile approach.

Using the Uber's website as case of study, we have shown how a Custom GPT can effectively handle complex interactions across three tasks: gathering requirements through user simulation, implementing user interface modifications and proposing a suiting project that follows the Agile principles.

This study presents promising results and offers an overview of the potential of this new and multidisciplinary field of study (Dwivedi et al., 2023). Future research could focus on expanding the current work, for example by considering also projects involving physical products to create more versatile applications for this groundbreaking technology in the project management field.

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