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Development Plan

AI Text-Based Adventure

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# **Project Overview**

When it comes to entertainment, often audiences find there is a lack of interactive entertainment opportunities to enjoy. Viewing media such as movies and tv shows, or listening to music and podcasts are good choices, however, none of these options give the user any control over the narrative/any interactive nature. This is where our project comes into play, we aim to make two text-based adventure web games allowing the users to shape their own narrative by allowing users to reach unique endings and another where you fight unique bosses. This gives the power of interaction to the user’s hands and allows them to have a unique playing experience. The user will be prompted with choices that are either action-based or stealth-based, with action-based choices leading to enemy encounters with a battle system, and stealth-based choices not having any enemies to deal with, so it is the default “easy” route. In addition, a second game will also be included allowing users to play a more combat oriented game allowing them to fight five different bosses with an expanded battle system compared to the first game.

# **Project Purpose, Scope, Objectives**

The purpose of this project is to develop a website where the user can select a text-based adventure game to play based on two choices. The first game being a branching storyline game with multiple endings and the second game being a combat focused game consisting of different boss battles. This project aims to provide the user with a more interactive gameplay experience where the user has control over the narrative by being given a set of choices to choose from so that the user doesn’t passively view the story but is an active participant in it. Additionally, it will also provide a secondary game with expanded battle mechanics from the first game. This second game will provide robust battle mechanics making for a more engaging combat experience that make the user think on which attack will be the most appropriate for the given battle.

The scope of the first game:

* The story will be split into two types of decisions, stealth/action-based decisions.
* Multiple endings for the user to reach with 15 different endings. Each ending can be categorized as good endings, bad endings, and secret endings.
* The journey starts at one point and gives multiple choices to the user to go down separate paths, split into stealth and action-based choices.
* The action-based choices lead to an enemy battle and the stealth-based choices avoid combat and rely on the choices you make.
* Stealth based scenarios gives the choice between 2-5 buttons offering different choices that will lead you to a different path.
* Combat scenarios involve fighting one enemy to advance further into the path. The user will be given the options to attack or stay still and will go back and forth between the enemy until the enemy is defeated or the user is defeated.
* A progress bar to track all the branches that the user has visited and progress will save if the user were to leave the page and return.
* An autosave feature where users can leave off in the middle of a branch and be able to return at a later time without losing their progress.
* User interface customization such as adjusting background colors, text style, and text size.
* Because of the battle mechanics and the way the dialogue is written in this game, this project will be intended for the college age demographic. This game is designed for newcomers in the text-based adventure genre.

The scope of the second game:

* Fight against five different bosses with the user being allowed to fight all five in any order.
* There will be no stealth scenarios in this game with only combat scenarios.
* The battle mechanics will include new different ways to fight against an enemy with certain attacks being better against certain bosses.
* The user can now select between different classes with each having their own benefits and drawbacks.

Additional scope of the project:

* Register and login functionality.
* Email verification after registering to be able to login.
* A game selection page to select the game to play.
* A help page offering information on how to play the game and information about the genre.
* A profile page to edit personal information and to change your password.
* Forgot password and forgot username feature to be able to login if the user forgot their credentials.
* Extra smaller side games scattered throughout the application.

The objective of this project is to provide two games with one being a mix of stealth/action gameplay and the other being a combat focused game. The first game will provide 15 different endings for the user to reach and complete. The endings for the game can be categorized as good, bad, or secret endings. The second game will offer five different bosses for the user to challenge and defeat.

# **Team Organization**

All members of the team are expected to work on all aspects of the project in some capacity. Listed below is a breakdown of all the roles and responsibilities that were assigned to a member of the project. Some roles have been assigned to multiple members due to the complexity of the responsibility.

Discord will be the main form of communication between team members. It allows for easy communication by text, audio, or video. It also offers tools such as pinning important information for team members to refer to throughout the duration of the project.

* Ankith Goutham
  + Front-end Lead
    - Oversees the development of the front-end component of the project, including but not limited to the user interface and visual design decisions for the project.
  + Team Lead
    - Oversees the entire team and is responsible for high-level planning for the project.
    - Responsible for communicating with the client, GTA, and instructor.
    - Enforces the Problem Resolution Policy when needed and ensures that all team members are producing working and functional code in a timely manner.
    - Ensures all team members are delegated an equal amount of work and adjusts the workload for individual members to ensure the completion of a deliverable in a timely manner.
    - Submit all required documents to Canvas.
  + Quality Assurance Lead
    - Oversees the testing of the project and ensures that all aspects of the code satisfy the listed requirements and performs in a functional manner.
  + Story Script Writer
    - Oversees the creation of the main textual script of the game based on the story and ideas generated by the Story Creation Lead.
* Mahin Haque
  + Back-end Lead
    - Oversees the development of the backend component of the project, including but not limited to the design of the database and server side functionalities.
  + Documentation Lead
    - Oversees the creation of the document and ensures all listed requirements are met. Advise team members to make corrections to their portion of the document if the requirements are not being met.
    - Takes note of the feedback given by the GTA and applies it to the current and future documents.
  + Note Taker
    - Responsible for taking notes during meetings noting any relevant information that was worked during the meeting and completing the meeting minutes document.
* Jayanth Nama
  + Presentation Lead
    - Oversees the creation of the presentation and ensures all listed requirements are met. Advise team members to make corrections to their portion of the presentation if the requirements are not being met.
    - Takes note of the feedback given by the GTA and applies it to the current and future presentations.
  + Quality Assurance Lead
    - Oversees the testing of the project and ensures that all aspects of the code satisfy the listed requirements and performs in a functional manner.
  + Presentation Note Taker
    - In charge of taking notes during class and noting feedback given by the instructor to use during the creation of future presentations.
* Lilac Sabri
  + Front-end Lead
    - Oversees the development of the front-end component of the project, including but not limited to the user interface and visual design decisions for the project.
  + Presentation Lead
    - Oversees the creation of the presentation and ensures all listed requirements are met. Advise team members to make corrections to their portion of the presentation if the requirements are not being met.
    - Takes note of the feedback given by the GTA and applies it to the current and future presentations.
  + Story Creation Lead
    - In charge of generating ideas and planning out the general events that will happen throughout the story.

# **Problem Resolution Policies**

Regarding disputes among team members, a majority vote will decide which course of action would be better for the team, however the goal is to come to a consensus before the use of the vote. Disputes for technology choices will be resolved by examining the familiarity with the technology for each team member and coming to a decision based on how many members are acquainted with the technology. If the majority vote fails, then the Team Lead will make the final decision. Any decisions regarding changes to the technology must be approved by the GTA first.

Attendance is key for the success of the project. By attending meetings, you can bring up any issues that you are having and stay up to date on aspects of the project. For this project, we will be instating a three-strike system regarding missing meetings without any notice. A warning will be given by the team lead after the 1st miss via email or Discord message. After the 2nd miss, another warning will be given by the team lead and the GTA will be contacted. After the 3rd miss, the professor will be contacted, and it will be up to their discretion on how to proceed next.

Code must be delivered in a punctual manner due to its importance and reliance from other team members. Team members should bring up any issues they are having with the code as early as possible to ensure that the team doesn’t fall behind and so that we can accommodate if needed. Because of this, the policy regarding the code deadline will be stricter compared to the attendance policy. Monday will be the “soft” deadline for code while Wednesday will be the “hard” deadline. If a team member fails to deliver code by the hard deadline, then they will be given the 1st strike where the team lead will give a warning by email or Discord message. The individual will have to make the soft deadline for the following weeks required code. After the 2nd strike, the GTA will be contacted, and it will be up to their discretion on how to proceed next. If the code is not delivered on time for a 3rd time, then the professor will be contacted, and it will be up to their judgement on how to handle the situation.

When contacting the GTA or the professor, the Team Lead will contact them when the policy calls for it. In the event where the Team Lead is the offender, Jayanth will contact the GTA or professor. All misses for the attendance policy and failure to deliver policy will be maintained on a piece of paper by the team lead with an image of it being pinned on the Discord channel. The image of the paper will be retaken and pinned each time it is updated. In the event that the Team Lead has a miss, Jayanth will copy the current chart, update it, and then will repost and pin the image on the Discord channel. In the event where the Team Lead is absent during a meeting, Jayanth will assume the role of Team Lead temporarily.

# **Project Plan (Iterations, Project Schedule)**

Weekly Meetings have been decided by the team that suits everyone’s schedule.

* Every Monday and Wednesday from 3:00 PM to 5:15 PM, it will be 2 hours and 15 minutes long, and it will be held at UGL.
* In the case that a team member cannot attend the meeting in person, they can attend the meeting on Discord where the team members will start a call with them, and the other three members will attend in person.
* The GTA meeting will happen on Thursdays at 6:30 PM for updates from our project and receive any feedback. The meeting will be virtual most days, and it will be held on Zoom. This meeting will usually last about one hour.
* The team will have an optional meeting on Fridays at 2:00 PM if any additional clarification is needed for a team member for their task in the overall project. This meeting will be virtual which will be held on Discord. The duration of this meeting will usually be about 2 hours and can end early if everyone’s questions are answered.

The team lead will be taking everything into account and will be assigning tasks to complete throughout the next week. We have to strictly adhere to this project schedule because we only have about two weeks of time for each milestone, and if we fall behind on even one of them it will start to have a detrimental effect on the rest of the project. The following is the team’s current tentative project plan:

* Requirements Gathering Due 1/20/24
  + Development plan discussed among team members.
* First Prototype Due 2/3/24
  + Develop a general skeleton of the game we hope to create using python
  + Login Authentication and account creation features must be completed
  + The team must develop the gameplay for the story for the application.
* Design Specifications Due 2/24/24
  + Application testing should be underway to check for further problems within the app, and any needed modifications.
  + Design specifications should be decided by the team and must be developed that fits the design everyone agreed upon.
* Second Prototype Due 03/2/24
  + Develop the enemy AI figures, the battle system, and have them implemented in the game.
  + The team must develop the gameplay for the story for the application.
* Third Prototype Due 03/23/24
  + Finalized most of the app’s attributes like design, stories, layout, background, and functionality.
  + Must have developed the branching story system and have it implemented into the game.
  + Game must be almost fully functional for users to try and give feedback.
* Test Plan Due 3/29/24
* Final Due 4/13/24
  + All required components listed for the game are complete.
  + All parts of the game are fully tested and consistent with the team’s vision for the game.

# **Configuration Management Plan**

The team has agreed to use GitHub to manage collaboration among team members. We chose our source control method based on having a set master/main branch, and team members will be able to fork into the main branch. Each member will have their personal branch to complete their task in the project, and this ensures that there will be no further confusion about what each person completed in the project which maintains an organized structure for the overall project. Team members will be able to merge their code to the master branch by only the approval of each of the rest of the team members, and it will be discussed among the team for each feature that the team member will be forking into the master branch.

# **Technologies**

**Programming Languages**

**Python (3.12.1):**

Python will be used as the as the language for the development of the backend component of the application. Python also gives us access to the Django framework which is a robust web framework.

**HTML5:**

HTML5 will play an important role in developing the basic structure and elements that will help shape the game's contents. HTML5 will help organize the elements and enhance the aesthetic quality. It will also serve in creating a layout and will play an important role in the front-end development.

**ECMAScript (ES13):**

JavaScript, a scripting language, will be used to make the game interactive for the user.

**CSS3 (4.15):**

Cascading Style Sheets (CSS) will be used for the design and configuration of the AI-text based adventure. CSS will be used to define the design aspects of HTML5 and will be used to specify how the game will be displayed to the user.

**Database**

**SQLite (3.45.0)**

SQLite will be used as the database. SQLite is the built-in database and is set as the default for the Django framework. Using SQLite will simplify development due to not having to download and set up an external database on each developer’s system.

SQLite is a relatively simple database compared to others such as PostgreSQL. However, this application will not require the storage of a lot of information other than user information and game state information.

**Integrated Development Environment (IDE)**

**Visual Studio Code (1.85):**

Visual Studio Code (VS Code) will be used for implementing HTML, CSS, JavaScript and Python. VS Code offers an intuitive user interface and has features such as code complete which will speed up development.

**Frameworks:**

**Django (5.0.1):**

Django will be used for the back-end development of the game. Django will be used to combine HTML and python for developing webpages for the AI-text based adventure. Django will be used to implement server-side functionalities and database models. Django also comes with a built-in database, the SQLite3 database. Django is a Python framework, which will allow the developers to be able to pick up the framework quickly and begin implementing features rapidly.