**Documentation**

# Installation / Setup Procedures for OpenAI API Functionality

1. In Visual Studio, navigate to Tools
2. Navigate to the Nuget Package Manager side menu
3. Click on Nuget Package Console
4. In the console that opens below, execute the following command “Install-Package OpenAI” which will install the necessary package
5. Back in the Nuget Package Manager side menu, click on the package manager button in the middle
6. In the search bar in the new window that opens, search for “openai”
7. When OpenAI comes up, click on it, and click on the two relevant project folders so as to check mark each. If there is an install button, click install
8. Next, go to OpenAI and sign up for and fund an OpenAI apikey
9. Copy the key that you generate for the upcoming command
10. Next, open a command prompt and type the following command to set a new environment variable: ‘setx OPENAI\_API\_KEY “<yourapikey>”’ - without the single quotes or </> symbols and it will generate a “SUCCESS” response
11. This concludes the requirements for installation of this feature

\*\*\* **IMPORTANT NOTE**: This feature branch has been disabled due to financial requirements of OpenAI ApiKey and issues implementation the Api key to other users’ devices (discovered one day before deadline; and the possibility of extending said deadline is not possible without a Project Manager)

# **Home page**

### Added Menus to start game and shortcuts:

* + New Game button: Allows us to play the game. It calls the FrmLevel form.
  + Exit button: Exits the application.
  + Esc key press: Exits the application.

### Added storyline and the animation

* + Added a timer to the pictureBox to change the images at specific time
  + Added a timer to the label to change the story at the same time with the image.
  + Added a timer to the label to change the name of each character at the same time with the image

### Added an instruction page link and instruction page.

* + Add a button button to home page to click and access instruction
  + Add label to place the instructions
  + Added a button to go back to the home page from the instruction page

# **Form L**ev**el**

### Function to remove dead enemies

* + Added function so that enemies will disappear from the map when their health is zero.

### Added Gameplay so enemy can only fight with Boss enemy after non boss enemies are dead

* + Added gate in the FrmLevel and that will prevent player to reach boss enemy
  + Implemented method to generate key in the FrmLevel and users can interact with that key.
  + Implemented the action: removing the gate, once the player interacts with the key.
  + Implemented the method of displaying text when the player interacts with the gate without killing all the side-enemies and collecting the key.

### Added Health generation game play

* + Once both non boss enemies are dead, a health potion is displayed in the map.
  + After the player interacts with a health potion their health will be increased by 6 points.

### Added Player Heath level bar

* + Player health bar is displayed in the top left.
  + The player health bar color will be changed as per health point in following manner:
    - If player health >= 16, color = Green
    - If player health <= 16 and >= 13, color = GreenYellow
    - If player health <= 12 and >= 9 ,color = Yellow
    - If player health <= 8 and >= 5, color = DarkOrange
    - If player health <= 4 and >= 1, color = DarkRed

### Added Go to Home and keyboard shortcuts

* + Created a button ‘Go To Home’ that allows us to go to the home page while playing the game. It calls the FrmHome form.
  + Added some key presses:
    - Esc key press: Exits the application.
    - Q key press: Allows us to go to the home page. It calls the FrmHome form.

### Player and Boss Graphic Changed

# Form **Battle**

### Player Health Adjustments

* + On attack with non boss enemies:
    - Player health decrease by 3
    - Enemy health decrease by 4
  + On attack with ChatGpt/Boss enemy:
    - Player health decreased by 3
  + On heal with ChatGpt/Boss enemy:
    - Boss health increases by 4

### Added Win/ Lose condition

* + When player health becomes 0, a message box is displayed showing that the player has lost the game and if he/she wants to play the game again. If the player selects ‘Yes’, then the home page is loaded and if ‘No’, the application is closed.
  + When enemy health becomes 0, a message box is displayed showing that the player has won the game and if he/she wants to play the game again. If the player selects ‘Yes’, then the home page is loaded and if ‘No’, the application is closed.

### Boss Fight Music

* + Added an exciting background song for the final fight. The song itself highlights the supremacy of the AI boss that the player fights (Fun Fact: The song itself was generated by Chatgpt!, although a musician on youtube collected it to music. Fair Use Claim for educational purposes and being a shortened/clipped version of the song)

### Updated Instance Handling when FrmBattle Closed

* + There were issues where the player could close the FrmBattle Form directly by the window “X” button and it would causes errors and crashes in the game – fixed
  + There were also issues in when the player would win or lose a fight during the FrmBattle Form’s normal processes and errors and/or crashes would follow when FrmBattle was called again later from the FrmLevel – fixed

### Added sound on Attack

* + Added a sound when the attack button is clicked.

### Added flee button

* + Added a flee button that allows the player to flee from the battle. When the player returns back to the battle, it resumes from where he last left.

### Added sound on flee

* + Added a sound when the flee button is clicked.

# **Themes**

### Added themes “New” and “Invisible”

* + Created function applyTheme1 on FrmLevel to create “New Theme” that has different backgrounds, walls, character images.
  + Created function applyTheme2 on FrmLevel to create “Invisible Theme” that has all the characters invisible.

# Chat GPT Integrations

### Chatgpt ReturnResponse

* + Use thread handling and OpenAI API to request a response from chatgpt with some given inputPrompt

### Chatgpt IntroBossStatement

* + Use ReturnResponse with a specifically structured inputPrompt to generate a relevant intro statement by the boss.

### Chatgpt MidFightBossStatement

* + Use ReturnResponse with a specifically structured inputPrompt to generate a relevant mid battle response based on if the player or the boss’s health has dropped below half of its maximum.

### Chatgpt GetBossDecision

* + Use ReturnResponse with a specifically structured inputPrompt, based on current game/fight states such as player and boss health as well as player and boss damage (and also healing amount) to generate a choice between “Attack” or “Heal” choices for the boss during each phase of the fight.

# Character Selection Form

### Created a character selection form that allows us to select characters

* + Created a keydown function that allows us to use arrow keys to select from different characters.

# Miscellaneous

### Updated Enemy Class to Simplify Identification

* + Updated the Enemy Class to include “Name” for simple identification of which enemy was to be handled during conditional situations

### Item Feature Architecture Added

* + Added a Factory Design pattern system to handle the intended item system
  + Added interfaces based to begin handling the items added to the system
  + Item factory system now handles implementation of items
  + Random items are capable of and implemented by way of the item system
  + Events are executed and all item handling done without need of Forms Design Window
  + Abstract classes handle generic item system method implementations