Assessment Task 1 – Planning and Problem Solving

Requirements Definition:

The game must meet various functional and non-functional requirements to ensure a hassle free and enjoyable experience for the player.

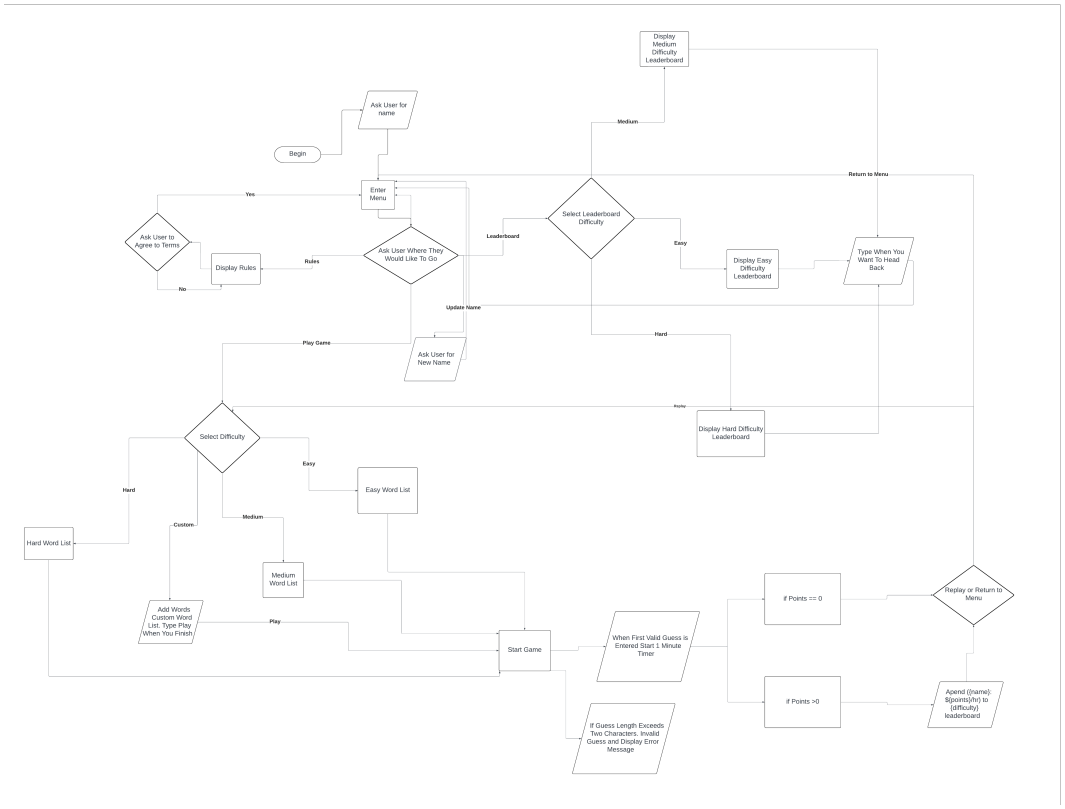
The most vital functional requirement is that of the game which must run properly and consistency to ensure fair results. Another functional requirement is to make a main menu system to enable players to navigate through various menus in the game. Additionally, the game folder must contain all necessary external files to ensure the game does not run into errors. Furthermore, the game must incorporate different wordlists for corresponding difficulties that are returned to the wordlist variable once the player has selected their difficulty. Finally, a leader board must be implemented to allow players to track and compare their progress to their peers.

Non-functional requirements are pivotal for ensuring a great experience for the player. A graphical display presenting the number of incorrect guesses in the game helps immerse the player in the game. Additionally, both coloured text and background music help draw the user to game by reducing the bland user interface that would usually be associated with a text-based game. Finally, a visual timer allows the player to keep track of how much time they have remaining after each guess to ensure they take appropriate measures.

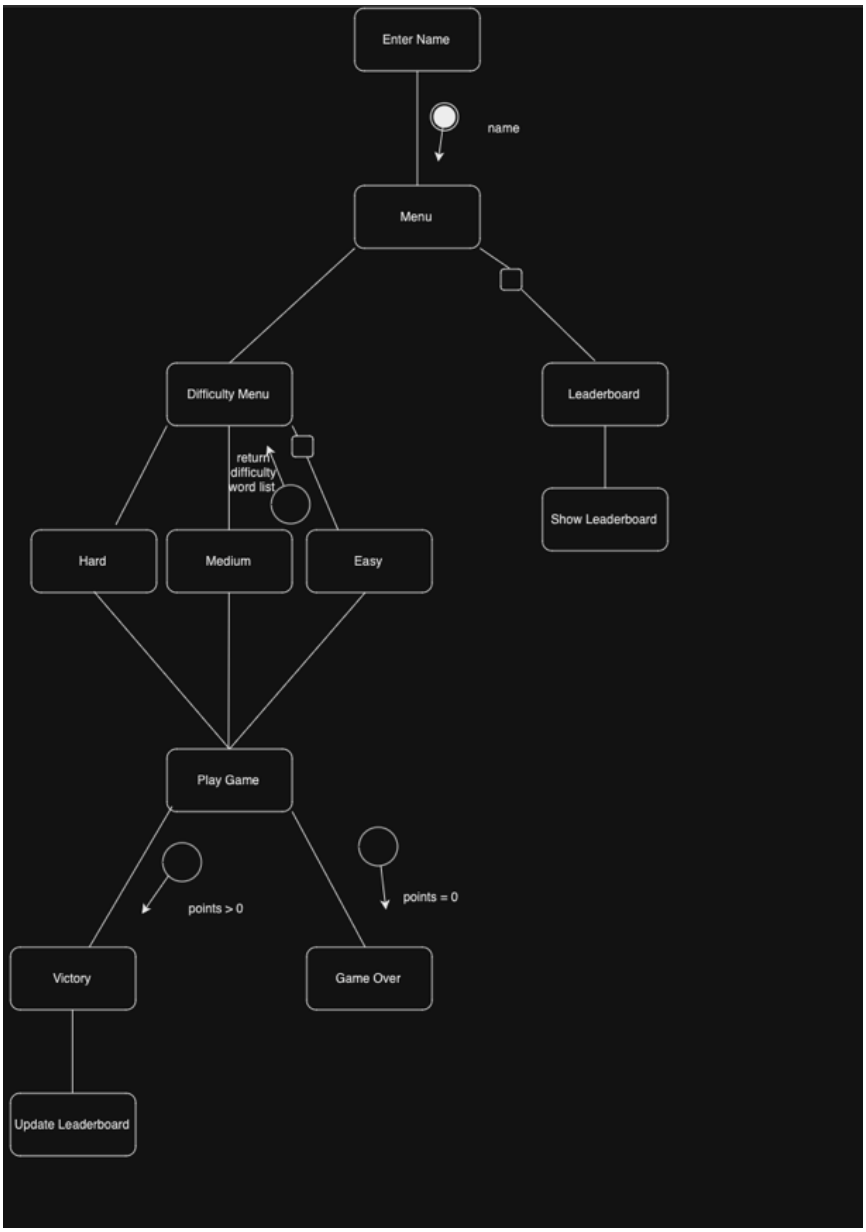
In conclusion there are multiple functional and non-functional requirements that should be considered when approaching this project.

Design:

Algorithm –



Structure Chart –

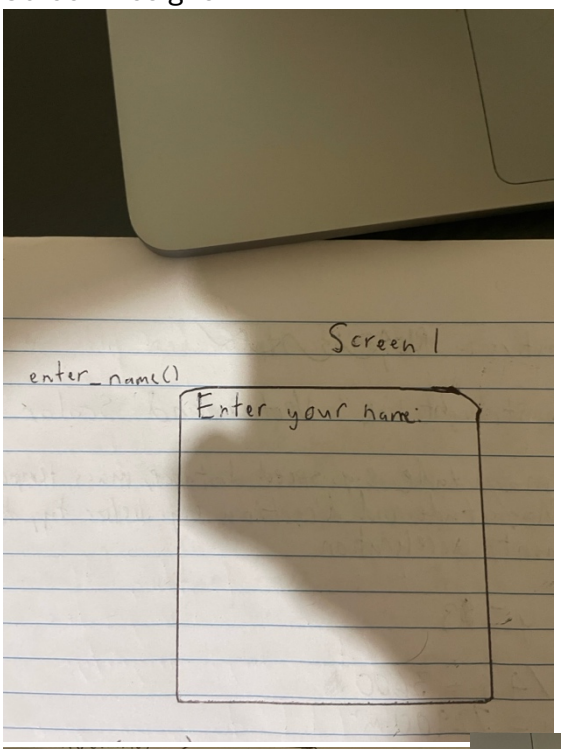


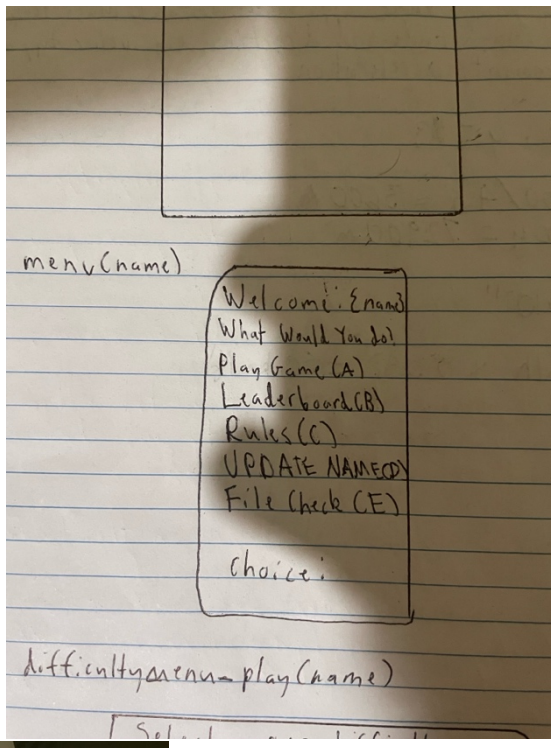
Data Dictionary –

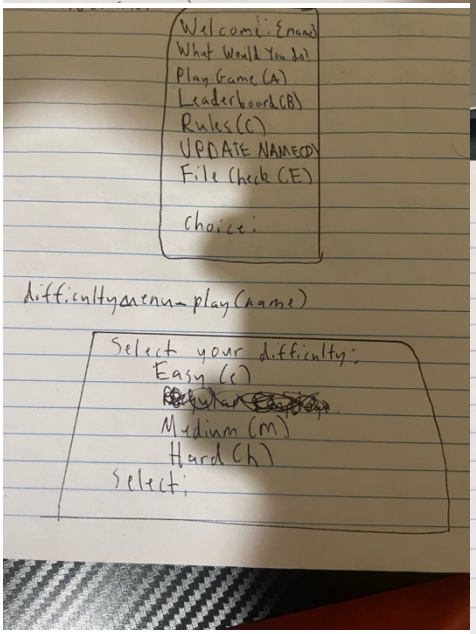
Variable	Data Type	Data Format	Description	Example
name	String	‘aaaa’	The name associated with the player	‘Pavith Singh’
difficulty	String	‘a’, ‘b’, ‘c’,…	The difficulty chosen by the player	‘Easy’, ‘Medium’, ‘Hard’, ‘Custom’
wordlist	List	[‘aaaa’, ‘aaab’, ‘aaba’,…]	A list of words for the difficulty level	[‘truck, ‘ducks, ‘frogs,…]
randomword	String	‘aaaa’	A randomly selected word from wordlist	‘truck’
guesses	string	‘a’, ‘b’, ‘c’…	A string of characters the player has guessed	‘t’, ‘r’, ‘u’, ‘c’, ‘k’
guess	String	‘a’	A character that the player has guessed	‘t’
points	Integer	nnnn	The player’s score	90
badguesses	Integer	nnnn	The number of incorrect guesses made in a game in increments of 10	10
start_time	Float	n:nnn	The time at which the player typed the first letter	0
end_time	Float	n:nnn	The time at which the game will end which is exactly 1 minute after the start_time	1:00
timecount	Float	n:nnn	A count of the remaining time after each guess	0:39
pay_rate	String	$nnnn/hr	The player’s scored displayed as a an hourly wage	$90/hr
leaderboard_position	String	‘a’, ‘b’, ‘c’	The difficulty for which the player	‘easy’, ‘medium’, ‘hard’

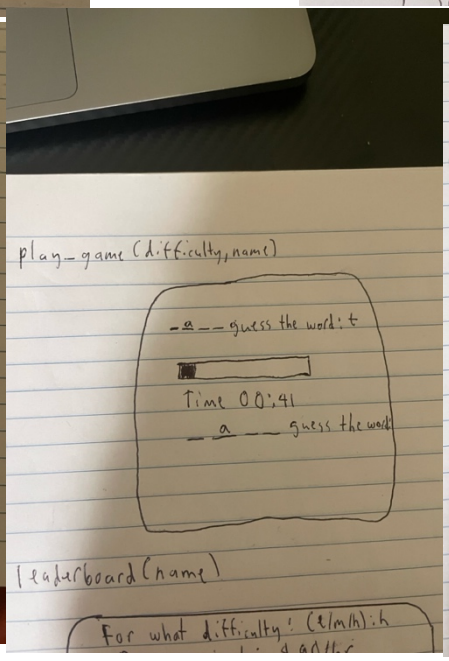
			wants to view the leaderboard for	
data	List	[‘aaaa: $nnnn/hr’, ‘aaab: $nnno/hr’,...]	The information in the text file of each difficulty	[‘Pavith Singh: $90/hr’, ‘Steve John: $100/hr’]
pay_rates	List	[‘$nnnn/hr’, ‘$nnno/hr’,...]	The pay rates extracted from the text file	[‘$90/hr’, ‘$100/hr’]
sorted_pay_rates	List	[‘$nnnn/hr’, ‘$nnno/hr’,...]	The pay rates sorted in descending order	[‘$100/hr’, ‘$90/hr’]
rate	List	‘aaaa: $nnnn/hr’ ‘aaab: $nnno/hr’...	The information in the text file in descending order in terms of pay rates.	‘Steve John: $100/hr Pavith Singh: $90/hr’
back	String	‘Y’ or ‘N’	The player’s response to the rules	‘Yes’ or ‘No’
customlist	List	[‘aaaa’, ‘aaab’, ‘aaba’,...]	A version of the wordlist, where the player chooses the word	[‘twentythreehundred’, ‘generational’,’ two’]
game_over	String	‘Y’ or ‘N’	The player deciding where to go after the game over	‘Yes’ or ‘No’
game_over1	String	‘Y’ or ‘N’	The player deciding where to go after the game over	‘Yes’ or ‘No’
goback	String	‘Y’ or ‘N’	A response to whether the player wants to return to the menu	‘Yes’ or ‘No’
menu_choice	String	‘a’, ‘b’, ‘c’...	A choice of where the player wants to go from the main menu	‘a’, ‘b’, ‘c’, ‘d’, ‘e’, ‘f’
new_name	String	‘aaaa’	A new name for the player replacing the old one	‘Steve John’

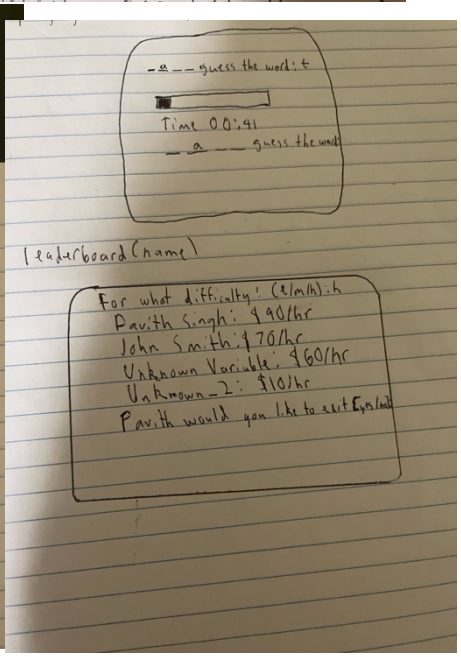
Screen Designs –









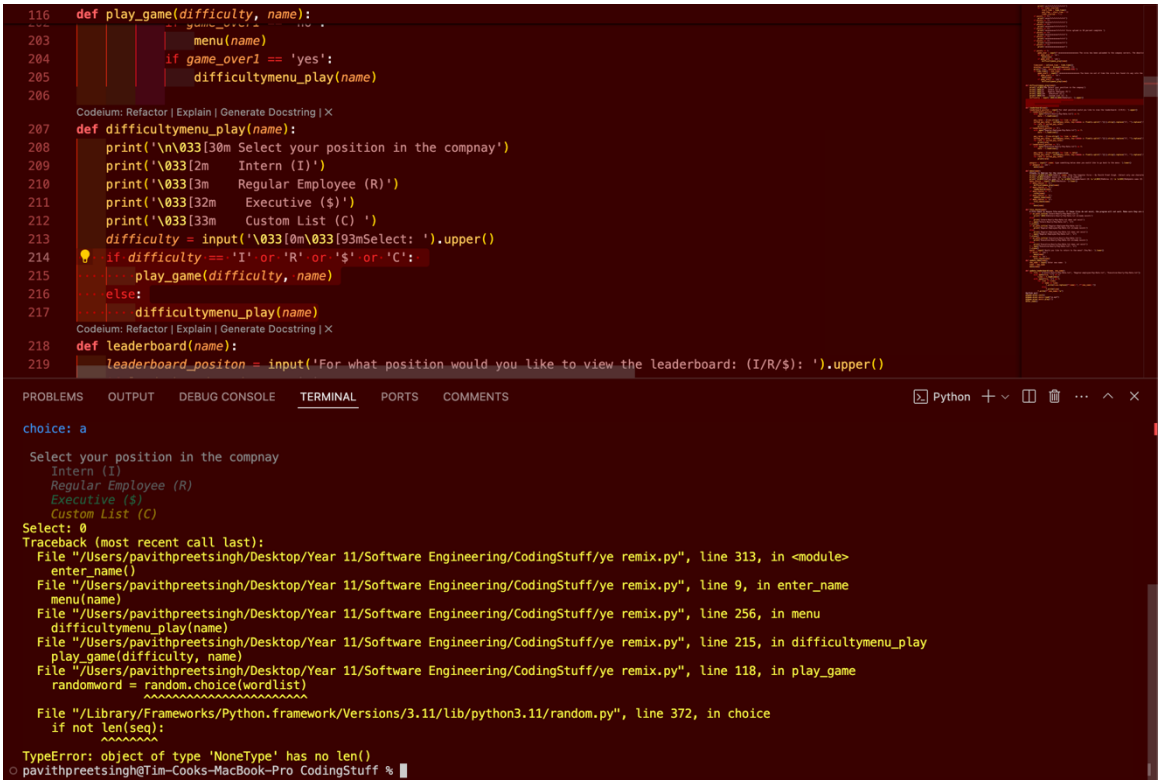


Testing/Errors:

Difficulty Selection –

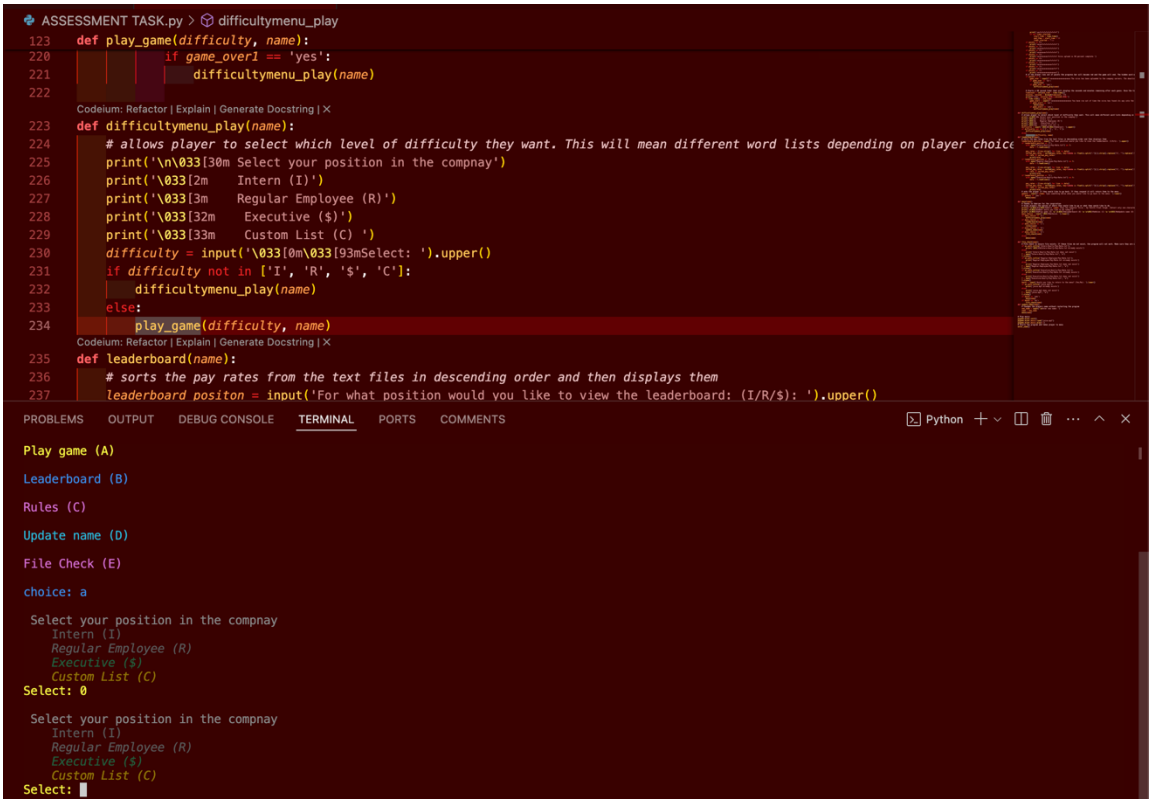
Input	Output
i	Return Wordlist(Intern) Call play_game(difficulty, name)
I	Return Wordlist(Intern) Call play_game(difficulty, name)
r	Return Wordlist(Regular Employee) Call play_game(difficulty, name)
R	Return Wordlist(Regular Employee) Call play_game(difficulty, name)
$	Return Wordlist(Executive) Call play_game(difficulty, name)
c	Return Customlist Call play_game(difficulty, name)
C	Return Customlist Call play_game(difficulty, name)
a	Call difficultymenu_play(name)
0	Call difficultymenu_play(name)

Encountered Error



This error occurs when you enter a character other than the four that are assigned to the wordlist. To fix this I instead changed the code to check if the input was not in a lit containing the four characters.

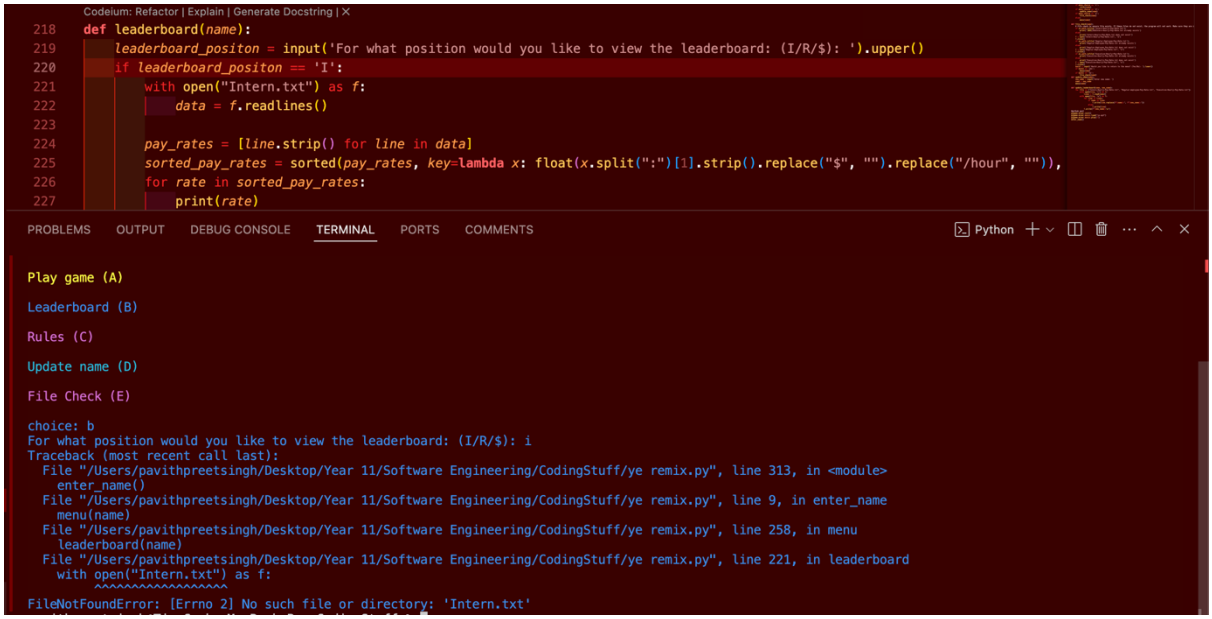
Fixed version



Leader board –

Input	Output
I	Print Sorted Leaderboard for Intern Difficulty
i	Print Sorted Leaderboard for Intern Difficulty
R	Print Sorted Leaderboard for Regular Employee Difficulty
r	Print Sorted Leaderboard for Regular Employee Difficulty
E	Print Sorted Leaderboard for Executive Difficulty
e	Print Sorted Leaderboard for Executive Difficulty

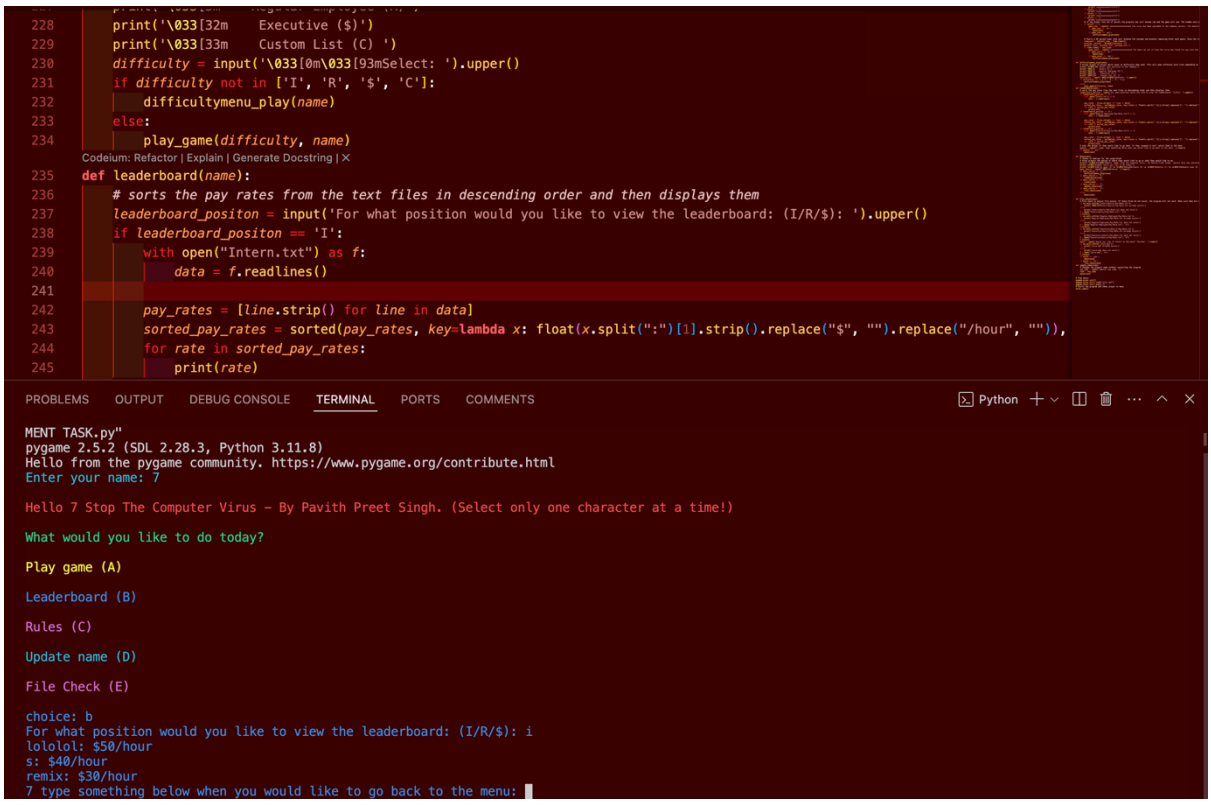
Encountered Error



```
Codeium: Refactor | Explain | Generate Docstring | ×
218 def leaderboard(name):
219     leaderboard_positon = input('For what position would you like to view the leaderboard: (I/R/$): ').upper()
220     if leaderboard_positon == 'I':
221         with open("Intern.txt") as f:
222             data = f.readlines()
223
224         pay_rates = [line.strip() for line in data]
225         sorted_pay_rates = sorted(pay_rates, key=lambda x: float(x.split(":")[1].strip().replace("$", "").replace("/hour", "")),
226         for rate in sorted_pay_rates:
227             print(rate)

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  COMMENTS                                   Python

Play game (A)

Leaderboard (B)

Rules (C)

Update name (D)

File Check (E)

choice: b
For what position would you like to view the leaderboard: (I/R/$): i
Traceback (most recent call last):
  File "/Users/pavithpreetsingh/Desktop/Year 11/Software Engineering/CodingStuff/ye remix.py", line 313, in <module>
    enter_name()
  File "/Users/pavithpreetsingh/Desktop/Year 11/Software Engineering/CodingStuff/ye remix.py", line 9, in enter_name
    menu(name)
  File "/Users/pavithpreetsingh/Desktop/Year 11/Software Engineering/CodingStuff/ye remix.py", line 258, in menu
    leaderboard(name)
  File "/Users/pavithpreetsingh/Desktop/Year 11/Software Engineering/CodingStuff/ye remix.py", line 221, in leaderboard
    with open("Intern.txt") as f:
         ^^^^^^^^^^^^^^^^^^
FileNotFoundError: [Errno 2] No such file or directory: 'Intern.txt'
```

This error occurred due to the text file not being located within my files, this is an easy fix and requires you to put all your essential files within the same folder regardless of whether they are python files

Fixed version

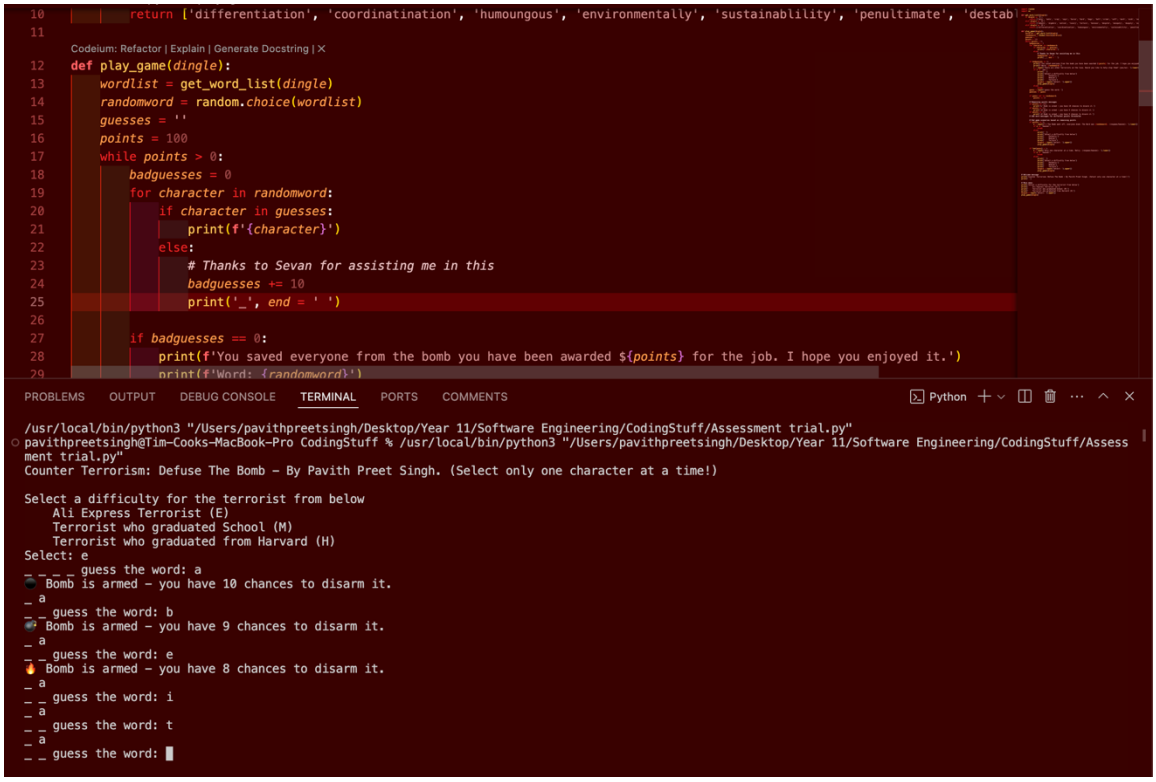


```
228     print('\033[32m    Executive ($)')
229     print('\033[33m    Custom List (C) ')
230     difficulty = input('\033[0m\033[93mSelect: ').upper()
231     if difficulty not in ['I', 'R', '$', 'C']:
232         difficultymenu_play(name)
233     else:
234         play_game(difficulty, name)
Codeium: Refactor | Explain | Generate Docstring | ×
235 def leaderboard(name):
236     # sorts the pay rates from the text files in descending order and then displays them
237     leaderboard_positon = input('For what position would you like to view the leaderboard: (I/R/$): ').upper()
238     if leaderboard_positon == 'I':
239         with open("Intern.txt") as f:
240             data = f.readlines()
241
242         pay_rates = [line.strip() for line in data]
243         sorted_pay_rates = sorted(pay_rates, key=lambda x: float(x.split(":")[1].strip().replace("$", "").replace("/hour", "")),
244         for rate in sorted_pay_rates:
245             print(rate)

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  COMMENTS                                   Python

MENT TASK.py"
pygame 2.5.2 (SDL 2.28.3, Python 3.11.8)
Hello from the pygame community. https://www.pygame.org/contribute.html
Enter your name: 7

Hello 7 Stop The Computer Virus - By Pavith Preet Singh. (Select only one character at a time!)

What would you like to do today?

Play game (A)

Leaderboard (B)

Rules (C)

Update name (D)

File Check (E)

choice: b
For what position would you like to view the leaderboard: (I/R/$): i
lololol: $50/hour
s: $40/hour
remix: $30/hour
7 type something below when you would like to go back to the menu:
```

Game

Input	Word	Output
a	bird	____
i	bird	_i__
R	bird	__r_
bird	bird	Error: guess can only contain one character

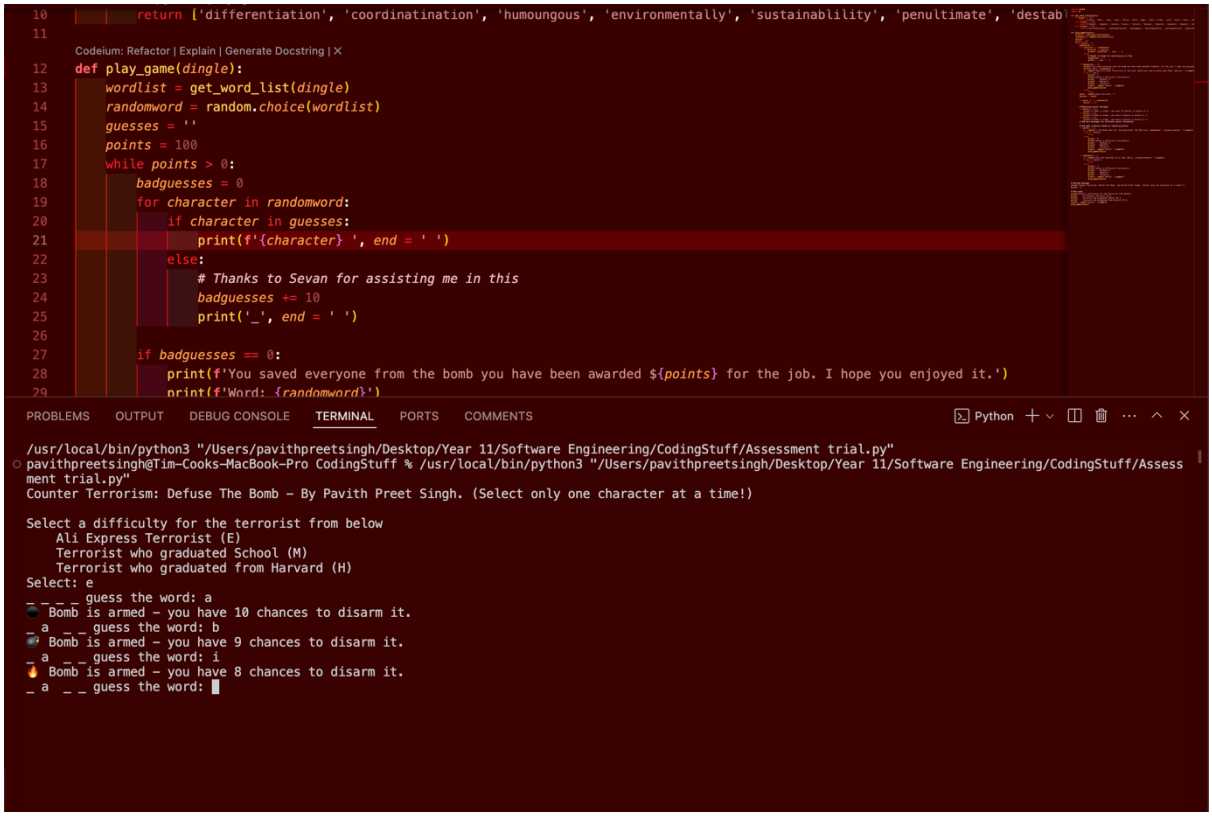
Encountered Problem



Very Early Version of the game

The problem being encountered here is that the all the lines after the guessed letter are down one line. To fix this issue I added end = ‘ ‘ to the end of print(f’{character}’) to replace the new line with a space.

Fixed Version:



```
        return ['differentiation', 'coordinatination', 'humoungous', 'environmentally', 'sustainablility', 'penultimate', 'destab

Codeium: Refactor | Explain | Generate Docstring | ×
def play_game(dingle):
    wordlist = get_word_list(dingle)
    randomword = random.choice(wordlist)
    guesses = ''
    points = 100
    while points > 0:
        badguesses = 0
        for character in randomword:
            if character in guesses:
                print(f'{character} ', end = ' ')
            else:
                # Thanks to Sevan for assisting me in this
                badguesses += 10
                print('_', end = ' ')

        if badguesses == 0:
            print(f'You saved everyone from the bomb you have been awarded ${points} for the job. I hope you enjoyed it.')
            print(f'Word: {randomword}')
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  COMMENTS                                   Python

/usr/local/bin/python3 "/Users/pavithpreetsingh/Desktop/Year 11/Software Engineering/CodingStuff/Assessment trial.py"
pavithpreetsingh@Tim-Cooks-MacBook-Pro CodingStuff % /usr/local/bin/python3 "/Users/pavithpreetsingh/Desktop/Year 11/Software Engineering/CodingStuff/Assessment trial.py"
Counter Terrorism: Defuse The Bomb - By Pavith Preet Singh. (Select only one character at a time!)

Select a difficulty for the terrorist from below
    Ali Express Terrorist (E)
    Terrorist who graduated School (M)
    Terrorist who graduated from Harvard (H)
Select: e
_ _ _ _ guess the word: a
💣 Bomb is armed - you have 10 chances to disarm it.
_ a  _ _ guess the word: b
💣 Bomb is armed - you have 9 chances to disarm it.
_ a  _ _ guess the word: i
🔥 Bomb is armed - you have 8 chances to disarm it.
_ a  _ _ guess the word:
```