SKILLS DEVELOPMENT LAB
ASSIGNMENT 2 – HANGMAN

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Problem Statement

Build the Hangman Game using Python

Logic

1. Starts the game using play_hangman function.
2. Selects a word at random from words.py file
3. Hides the characters in the word randomly and replaces them with "_"
4. Displays the hangman states and asks the user to guess a character
5. On a correct guess, reveals the hidden states of those character and updates the list of hidden characters
6. On a wrong guess, reduces the number of tries by 1 and based on that changes the hangman states
7. If all the hidden words are guessed correctly then sets the guessed_word to True and displays the win message
8. If all the tries are gone I.e., tries = 0 and word is not yet guessed then displays the loser message as well as the loser state of hangman
9. End the game
10. Asks the user if they want to play another game or not.

Code

```python
#HANGMAN code python

from words import word_list
from random import choice,sample,randint
import os
from time import sleep


class Hangman():  ## Define the Hangman class
    def __init__(self) -> None:
        self.hangman_states = stages = [  # final state: head, torso, both arms, and both
legs
                """

                --------
                |      |
                |      O
```

```
        |        \\|/
        |         |
        |        / \\
        -
    """,
    # head, torso, both arms, and one leg
    """
    
        --------
        |       |
        |       O
        |      \\|/
        |       |
        |      /
        -
    """,
    # head, torso, and both arms
    """
    
        --------
        |       |
        |       O
        |      \\|/
        |       |
        |
        -
    """,
    # head, torso, and one arm
    """
    
        --------
        |       |
        |       O
        |      \\|
        |       |
        |
        -
    """,
    # head and torso
    """
    
        --------
        |       |
        |       O
        |       |
        |       |
        |
        -
    """,
    # head
    """
    
        --------
        |       |
        |       O
        |
        |
        |
        -
```

```python
            """,
            # initial empty state
            """

                --------
                |     |
                |
                |
                |
                |
                -
            """
        ]

    def get_word(self) -> str:
        """
        returns a random word at random

        Returns:
            str: random word
        """
        return str(choice(word_list).upper())

    def display_state(self,tries : int,word_completion_state : list) -> None:
        """
        This Function printes the current state of hangman with
        some preset messages as well as print the remaining tries

        Args:
            tries ([int]): Number of tries remaining
            word_completion_state ([list]): The current state of the hidden character
                                            in the word
        """
        print(f"{'-' * 20}HANGMAN{ '-' * 20}\n\n")
        print(self.hangman_states[-(tries+1)] + "\n")
        print(f"WORD ------> {' '.join(word_completion_state)}")
        print(f"Tries Remaining : {tries}")


    def play_hangman(self) -> None:
        """
        Initiates a game of hangman
        Use has 6 tries to complete the word selected at random
        after tries run out or word is guessed , display a win
        or loss message and exit the game
        """
        tries=6
        current_word=self.get_word()
        guessed_word = False
        word_hidden_states = [current_word[indx] for indx in sample(range(0, len(current_word)-1), randint(1, len(current_word)-2))]
        word_completion_state = [letter if letter not in word_hidden_states else "_" for letter in current_word]

        while tries > 0 and not guessed_word:
```

```python
            os.system('cls' if os.name == 'nt' else 'clear') ## Clear the terminal for new
 lines to be printed
            self.display_state(tries,word_completion_state)
            guessed_char=str(input("Guess a Character : ")).upper()

            if guessed_char in word_hidden_states :
                print("\nCorrect Guess !!!!!! Updating..........")
                for indx,_ in enumerate(word_completion_state) :
                    if guessed_char == current_word[indx]:
                        word_completion_state[indx]=guessed_char

                word_hidden_states = [char for char in word_hidden_states if char != guess
ed_char]
                guessed_word = False if "_" in word_completion_state else True
                sleep(1)
            else :
                print("\nIncorrect Guess!!! Updating!!!!!!")
                sleep(1)
                tries=tries-1

        if tries == 0 and not guessed_word:
            os.system('cls' if os.name == 'nt' else 'clear') ## Clear the terminal for new
 lines to be printed
            print(f"{'-' * 20}HANGMAN{ '-' * 20}\n\n")
            print(self.hangman_states[-1] + "\n")
            print(f"No Tries Remaining , YOU LOST !!!!!")
            print(f"CORRECT WORD was ------> {current_word}")
            print(f"GAME OVER")

        if guessed_word:
            os.system('cls' if os.name == 'nt' else 'clear') ## Clear the terminal for new
 lines to be printed
            print(f"{'-' * 20}HANGMAN{ '-' * 20}\n\n")
            print(self.hangman_states[-tries] + "\n")
            print(f"YOU GUESSED THE WORD CORRECTLY !!!")
            print(f"WORD was ------> {current_word}")
            print(f"Congratulations You win")


if __name__ == "__main__":
    hangman=Hangman()
    continue_choice='y'
    while continue_choice == 'y':
        hangman.play_hangman()

        continue_choice=str(input("Do you want to play another game (Y/n) : "))
        os.system('cls' if os.name == 'nt' else 'clear') ## Clear the terminal for new lin
es to be printed
```

OUTPUT

```
--------------------HANGMAN--------------------


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                 |      |
                 |      O
                 |     \|/
                 |      |
                 |     / \
                 _


 WORD ------> A _ _ _ Y _ _ _ S
 Tries Remaining : 6
 Guess a Character : |
```

```
--------------------HANGMAN--------------------


                 --------
                 |      |
                 |      O
                 |     \|/
                 |      |
                 |     / \
                 _


 WORD ------> A _ O _ _ M O U S
 Tries Remaining : 6
 Guess a Character : n

 Correct Guess !!!!!! Updating..........
 |
```

```
--------------------HANGMAN--------------------


                 --------
                 |      |
                 |      O
                 |     \|/
                 |      |
                 |     / \
                 _


 WORD ------> A N O N _ M O U S
 Tries Remaining : 6
 Guess a Character : k

 Incorrect Guess!!! Updating!!!!!!
 |
```

```
-------------------HANGMAN-------------------


                _ _ _ _ _ _ _ _
               |        |
               |        O
               |       \|/
               |        |
               |
                _


YOU GUESSED THE WORD CORRECTLY !!!
WORD was ------> ANONYMOUS
Congratulations You win
Do you want to play another game (Y/n) : |
```

```
-------------------HANGMAN-------------------


                _ _ _ _ _ _ _ _
               |        |
               |        O
               |       \|/
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               |       /
                _


WORD ------> A N O N _ M O U S
Tries Remaining : 5
Guess a Character : y

Correct Guess !!!!!! Updating..........
|
```

FAIL

```
-------------------HANGMAN-------------------


                _ _ _ _ _ _ _ _
               |        |
               |        O
               |       \|/
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WORD ------> _ _ _ _ Y M _ _ S
Tries Remaining : 6
Guess a Character : u

Correct Guess !!!!!! Updating..........
|
```

```
-----------------HANGMAN-------------------


            --------
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           |       O
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           |       |
           |      / \
           _


WORD ------> _ _ _ _ Y M _ U S
Tries Remaining : 6
Guess a Character : l

Incorrect Guess!!! Updating!!!!!!
```

```
-----------------HANGMAN-------------------


            --------
           |       |
           |       O
           |      \|/
           |       |
           |      /
           _


WORD ------> _ _ _ _ Y M _ U S
Tries Remaining : 5
Guess a Character : p

Incorrect Guess!!! Updating!!!!!!
|
```

```
-----------------HANGMAN-------------------


            --------
           |       |
           |       O
           |      \|
           |       |
           |
           _


WORD ------> _ _ _ _ Y M _ U S
Tries Remaining : 3
Guess a Character : c

Incorrect Guess!!! Updating!!!!!!
|
```

```
-------------------HANGMAN-------------------


                  --------
                  |      |
                  |      O
                  |     \|/
                  |      |
                  |
                  _

 WORD ------> _ _ _ _ Y M _ U S
 Tries Remaining : 4
 Guess a Character : q

 Incorrect Guess!!! Updating!!!!!!
|
```

```
-------------------HANGMAN-------------------


                  --------
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                  |      O
                  |      |
                  |      |
                  |
                  _

 WORD ------> _ _ _ _ Y M _ U S
 Tries Remaining : 2
 Guess a Character : x

 Incorrect Guess!!! Updating!!!!!!
|
```

```
-------------------HANGMAN-------------------


                  --------
                  |      |
                  |      O
                  |
                  |
                  |
                  _

 WORD ------> _ _ _ _ Y M _ U S
 Tries Remaining : 1
 Guess a Character : x

 Incorrect Guess!!! Updating!!!!!!
|
```

```
--------------------HANGMAN--------------------




                 --------
                |       |
                |
                |
                |
                |
                 _



No Tries Remaining , YOU LOST !!!!!
CORRECT WORD was ------> ANONYMOUS
GAME OVER
Do you want to play another game (Y/n) : |
```