Subject: Python for Computational Problem Solving
Subject Code: UE23CS151A

Mini Project

Semester I: "HANGMAN"

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Problem Statement

Hangman is the digital version of your favorite letter guessing game. An old school favorite! The goal is simply to find the missing word or words by guessing letters. Some times we make mistake in spelling a word. To overcome this mistake and improve your vocabulary, we recreated the game Hangman using python.

Division of Work

Agnivesh

GUI using tkinter

Keerthana

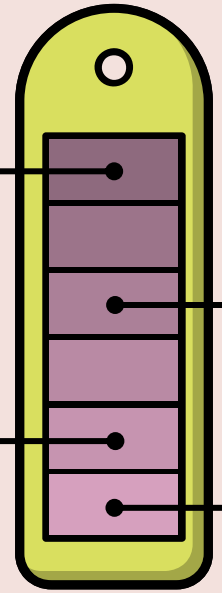
PPT and module implementation

Aakanksha

Coding using IDLE

Amritha

Project ideas and sound effects



About the Project

objective

The project aims at a functional, good looking implementation of the wordplay game “HANGMAN”

working

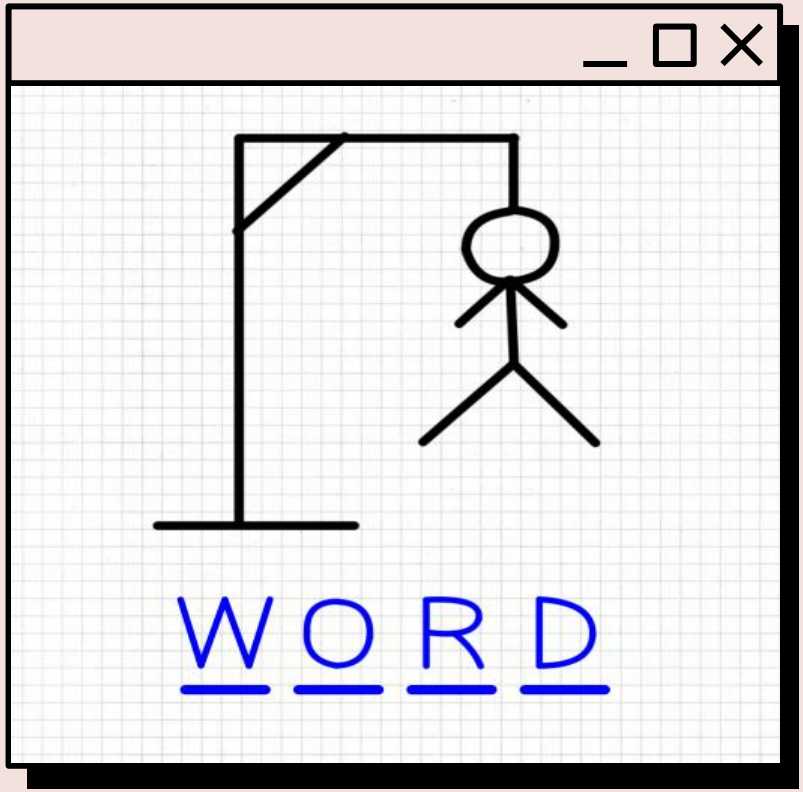
to select a secret word from a list of words. The random module provides this ability.

tkinter

It is a pre-built GUI framework and library for python

How is the Game Played?

.In this game, the player has a certain number of guesses to guess the characters in an unknown word. If the player is able to guess the characters in the entire word within certain attempts, they win. Otherwise, they lose.



List of Modules

- **Tkinter** is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications.

- **Random** module is an in-built module of Python that can be used to perform random actions such as generating random numbers, printing random a value for a list or string, etc.

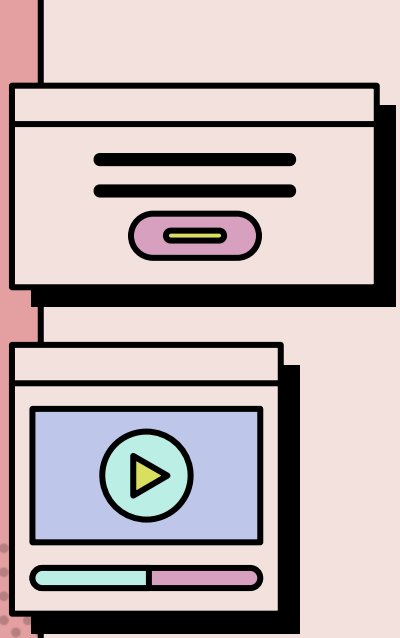
- **Pygame** is a cross-platform set of Python modules which is used to create video games. It consists of computer graphics and sound libraries designed to be used with the Python language.

- **Time** module in Python provides functions for handling time-related tasks such as- reading the current time, formatting time, sleeping for a specified number of seconds and so on.

- **Functools** module is for higher-order functions that work on other functions. It provides functions for working with other functions and callable objects to use or extend them without completely rewriting them.

- **Wonderwords** is a python package useful for generating random words and structured random sentences. It also comes with a colorful command line interface for quickly generating random words.

ALGORITHM



First, we will ask for the name of the user. We will take the user input using the input() method. After execution, the input() method takes the input from the user and returns a string.

Next, we will select a word and ask the user to start guessing the characters in the word.

We will also define the maximum number of attempts the user can take.

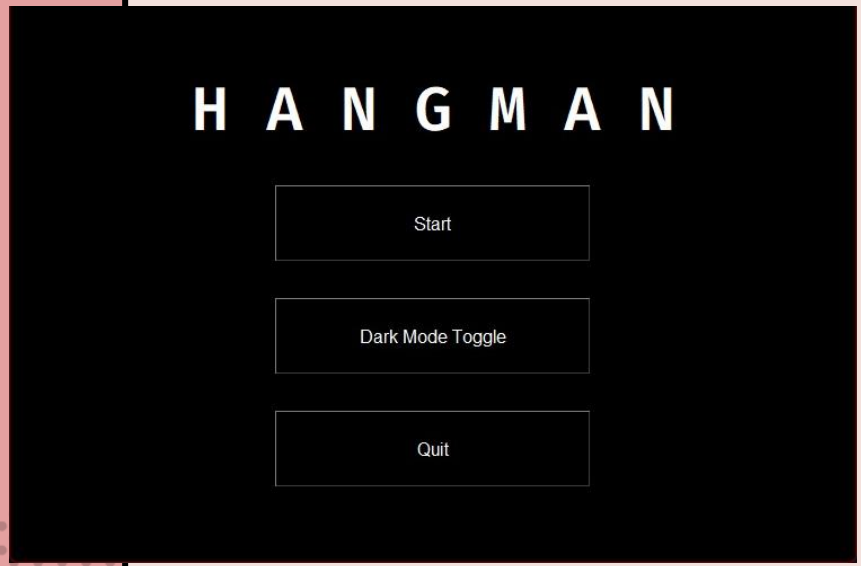
Now, we will use a while loop to repeatedly ask the user to guess the character until the attempts are exhausted.

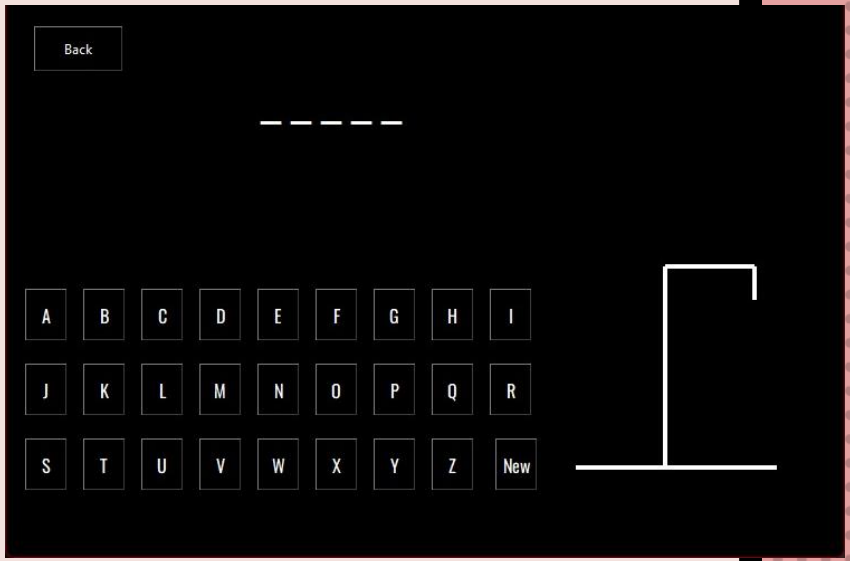
Inside the while loop, if the user guesses the correct character. We will include it in the response. Otherwise, we will notify the user that they made a mistake.

If the user is able to guess all the characters of the word within the maximum number of attempts, they win the game.

If the user exhausts all their attempts before guessing the entire word, they lose.

OUTPUT

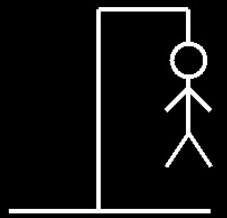

H A N G M A N
Start
Dark Mode Toggle
Quit


Back
_ _ _ _ _
A B C D E F G H I
J K L M N O P Q R
S T U V W X Y Z New

Back

You lose! The word was:
Forest

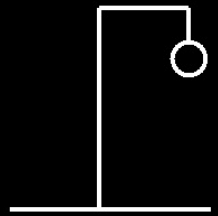
New



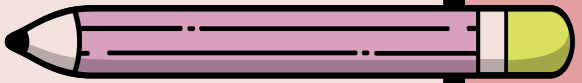
Back

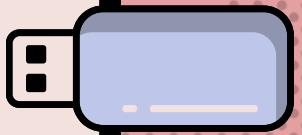
You Win!

New



Conclusion





The game ends once the word is guessed, or if the stick figure is complete, signifying that all guesses have been used. The player guessing the word may, at any time, attempt to guess the whole word. If the word is correct, the game is over and player wins.

Learnings

01 Using tkinter to create user interface

02 Learning to use various python modules to develop games

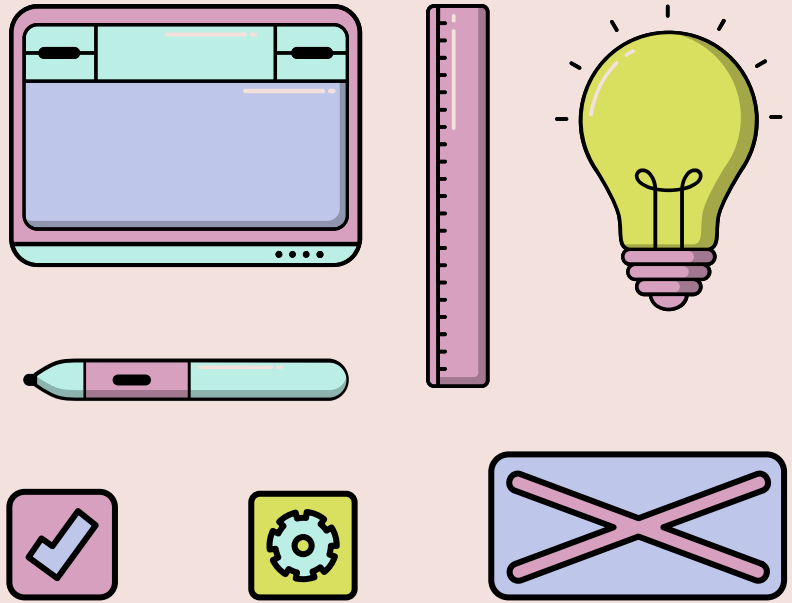
03 Adding sound effects when the user clicks certain buttons

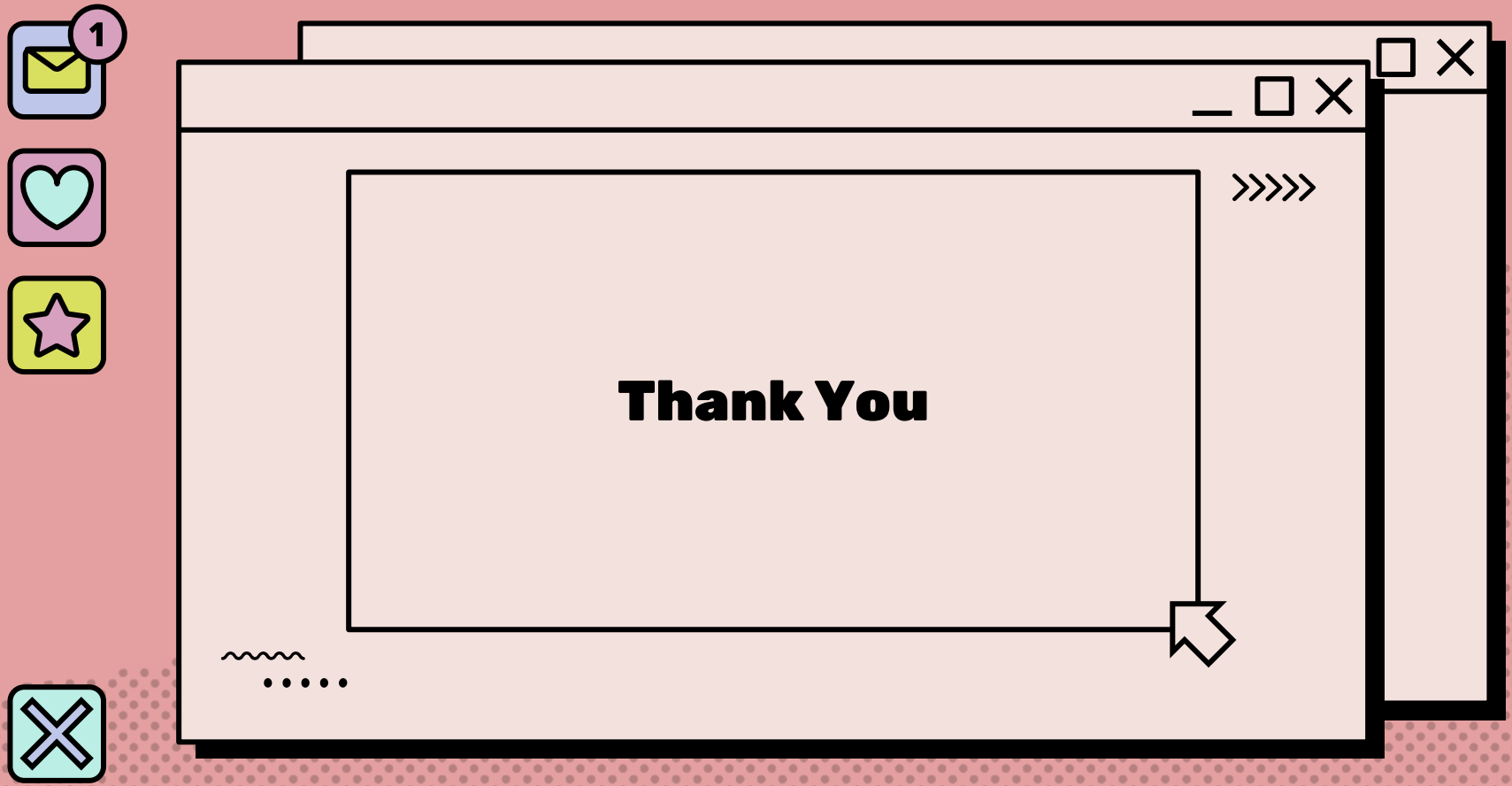
04 Optimisation of code

Future Work

We are working on adding

- Time limits
- Varying difficulty levels
- Themes such as fruits, flowers, cities for all the levels
- Hints
- Multiplayer option




Thank You