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MINI PROJECT REPORT

HANGMAN PROJECT

SUBMITTED BY

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SECTION - CS - B

SUBMITTED TO:-

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DECLARATION

I, **SHIVANI SHARMA** student of **B-tech, Semester 3,** Department of Computer Science and Engineering, Graphic Era Deemed University, Dehradun, declare that the technical project work entitled "HANGMAN PROJECT" has been carried out by me and submitted in partial fulfilment of the course requirements for the award of degree in B- tech of **Graphic Era Deemed University** during the academic year **2021-2022**. The matter embodied in this synopsis has not been submitted to any other university or institution for the award of any other degree or diploma.

Date: 31/03/22

ACKNOWLEDGEMENT

Here by I am submitting the project report on **"HANGMAN PROJECT"** as per the scheme of Graphic Era Deemed University, Dehradun. I would like to express our sincere gratitude to **Dr. Devesh Pratap Singh,** Head of Dept. of Computer Science, for providing a congenial environment to work in and carry out our project.

I consider it mine cardinal duty to express the deepest sense of gratitude to **ASHWINI KUMAR SINGH** Asst. Professor, Department of Computer Science and Application for the invaluable guidance extended at every stage and in every possible way.

I would like to also thanks DELL labs for helping me in better understanding each component of topic in an interesting way.

Finally, I am very much thankful to all the faculty members of the Department of Computer Science and Technology, friends and our parents for their constant encouragement, support and help throughout the period of project conduction.

SHIVANI SHARMA

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INTRODUCTION :

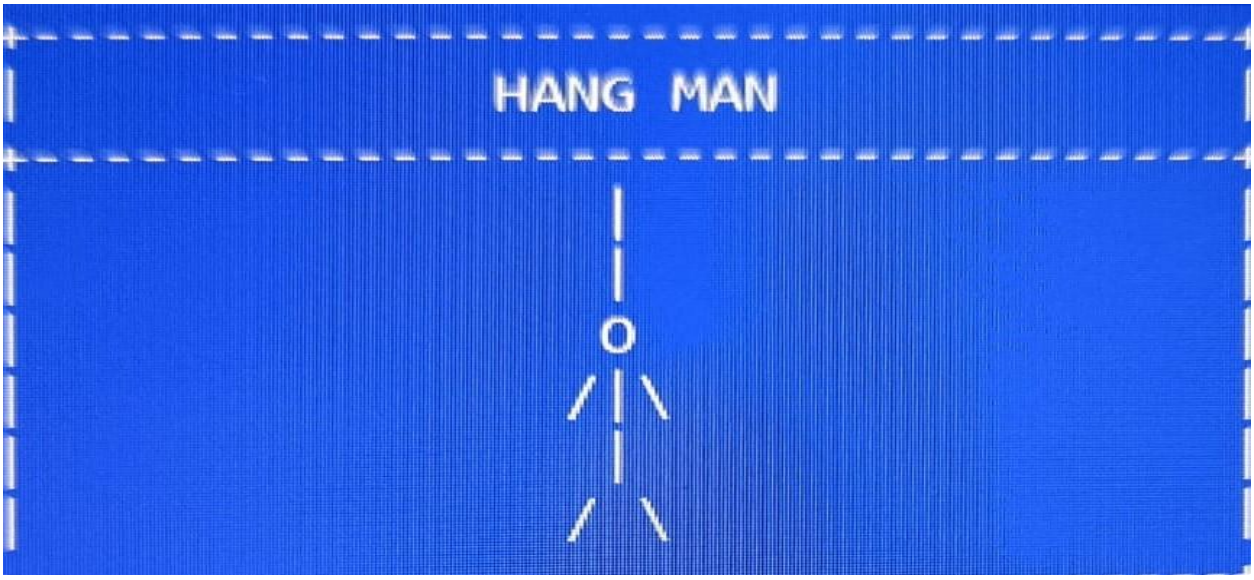
Hangman is a popular word guessing game where the player attempts to build a missing word by guessing one letter at a time. After a certain number of incorrect guesses, the game ends and the player loses. The game also ends if the player correctly identifies all the letters of the missing word.

PROBLEM STATEMENT:

Hangman is a paper and pencil guessing game for two or more players. One player thinks of a word and the other tries to guess it by suggesting the letters. The word to guess is represented by a row of dashes, giving the number of letters. If the guessing player suggests a letter which occurs in the word, the program writes it in all its correct positions. If the suggested letter does not occur in the word, the other player draws one element of the hangman diagram as a tally mark.

The game is over when:

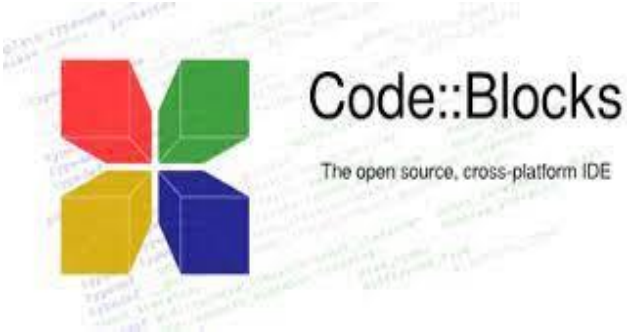
The guessing player completes the word, or guesses the whole word correctly and the players loses when the hangman is completed fully as shown in the snapshot :-



Fig(a):*A man like figure made of up tally marks^*

TOOLS USED:

1. CodeBlocks IDE



2. Notepad

This game can be developed on any operating system like Windows, Linux, Unix, Mac, etc. We will need an environment to be set-up on our local computer to compile and run our C++ program successfully. I have used CodeBlocks IDE to compile and run this program. To store the list of words, any text editor would work, I have used notepad for this purpose.

MOTIVATIONS:

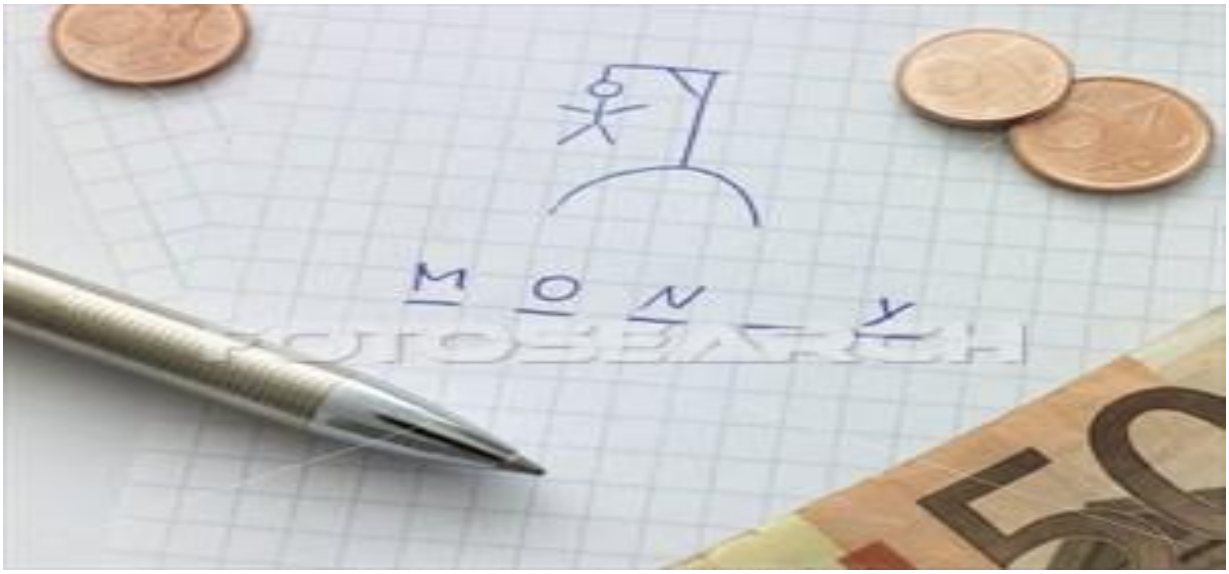
I have decided to use C++ language specifically. By working upon this project I have learned many good features about game development. Game development had always seem interesting to me. Also, Language games would give us much benefit which is very important for enhancing language skills. My mini project will obviously illustrate the above mentioned task of this game. I have done some good amount of homework about what my project will do, exactly what it will accomplish, I hope and have tried my best to complete it before the scheduled deadline.

THE STRATEGY OF THE GAME - GOALS and DELIVERABLES

In the English language, the 12 most commonly occurring letters in descending order are: e-t-a-o-i-n-s-h-r-d-l-u. This and other letter-frequency lists are used by the guessing player to increase the odds when it is their turn to guess. On the other hand, the same lists can be used by the puzzle setter to stump their opponent by choosing a word which deliberately avoids common letters or one that contains rare letters.

Another common strategy is to guess vowels first, as English only has six vowels (a,e,i,o,u,), and almost every word has at least one.

Thus the user wins if he can guess the word or else he is a loser .In this programming assignment I intend to implement the user interface by which the code takes input as letters of the word and checks for its presence. Also another task is to reduce the no. of chances (lifelines) one by one as the user keeps on guessing incorrect letters.



Fig(b)*: Pen paper hangman game ^*

TESTING/EVALUATION PLAN:

The gaming code will mainly contain the **function drawhangman** which will be used to draw the hangman for every wrong guess by the user ..Incorporation of some widgets will better the result screen , so that , the user can proceed in the game with no confusion. The overall architecture can be thought of having four main parts which consist of the following functionalities:-

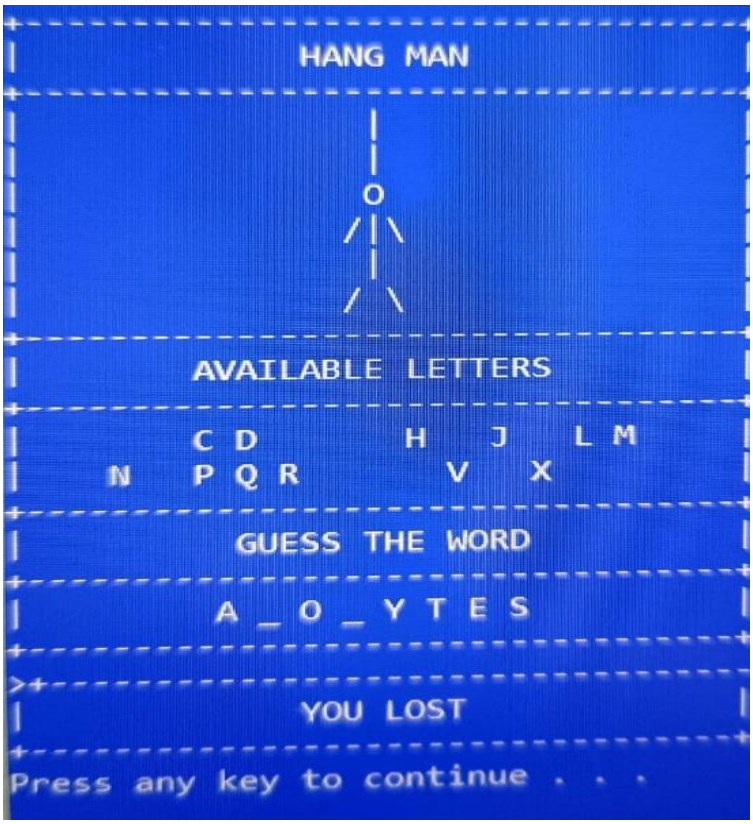
1) Formulating a word list (with or without a hint) and store them in a data structure with the list of all 26 alphabets of English Language.

2) The actual function which does the logical reasoning, whether the letter exists or not , if yes , write it down at all the places else strike off a lifeline. This forms the main part of the code.

3) Final word to be displayed if guessed wrongly else, interactive message saying that "YOU WON" & displaying the score ie. earned points.

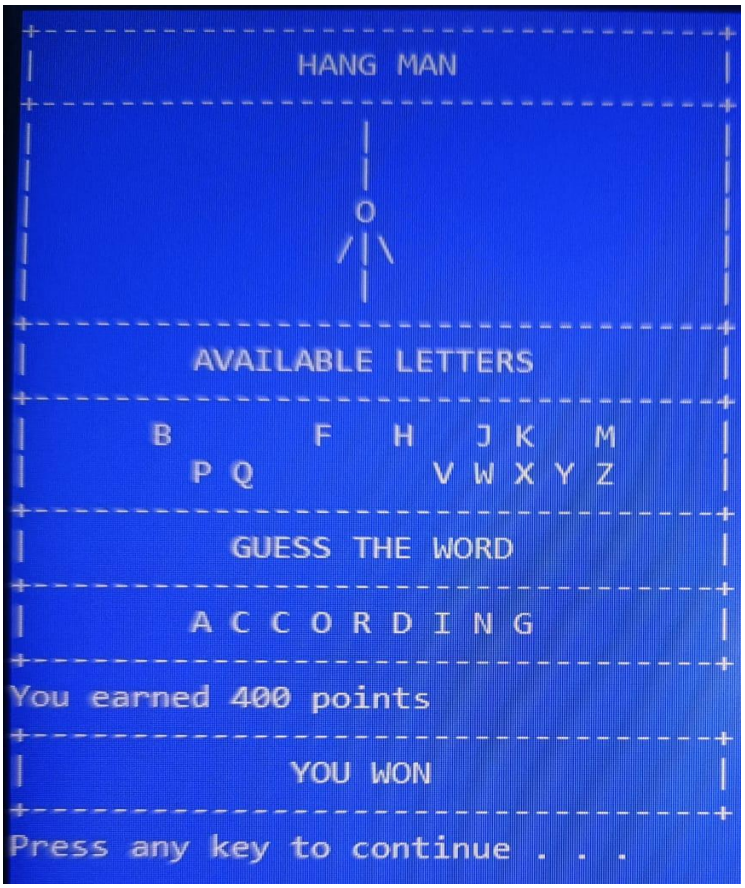
4) Finally, the program is terminated by pressing any key.

->*When user fails to guess the word:*



For this particular game, there will not be any specific test case except that, We will have to check whether the code works correctly or not for the words which are to be guessed. Also, by giving wrong letters more than the number of chances, such chances are not counted and the user needs to enter the guess again.

->When user guesses the word:



Functions used-

- void Printmessage- To print the message, borders and the spaces.
- void drawhangman- To draw the hangman for every wrong guess by the user.
- void Printletters- To print the letters from A-Z, which are to be guessed by the user.
- void Printavailletters- To print the available letters and omit the used ones.
- bool printwordandwincheck- To print the spaces and the right guessed letter.

- string randomword- pick a random word from the list
- int triesleft- To find the of the number of tries the user left.

CONTEXT:

Hangman Game Strategies :-

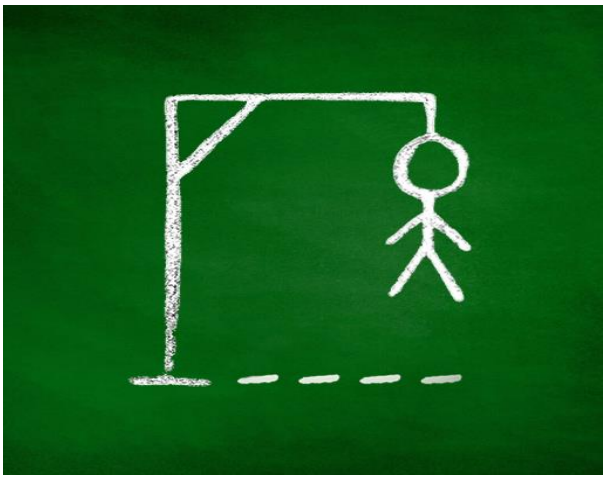
The most common used English letter is 'e' so one better starts by guessing it. The 4 other vowels ('a', 'o', 'i', 'u') are next popular after 'e'. The other most commonly used letters are 't', 'n', 's', 'h', 'r', 'd' and 'l'.

Utility of Hangman Games :-

Hangman is used often by teachers in schools to practice spelling, vocabulary and just for fun. The most popular way to play hangman games offline is to draw blank letters for the chosen word on a paper or on the blackboard and let the players guess the letters. For each incorrect guess, another part of the man is drawn. If the picture is complete before the word is revealed the hangman game is lost and the character is hanged, if the word is revealed before the execution the game is won.

JUSTIFICATION:-

The hangman game illustrates how much with discretion one can make the best choice at each stage. I picked up this topic as it was a simple but prudent game to check the intuition and tactics of a player in guessing the word in very less time. It subtly judges the efficient thought process of the player well. In the perspective of coding also, I feel it was a proper project for me to experience C++ in depth .



Future Scopes and extensions of this project:-

This game can have varied applications in the context of word formations and puzzles. Its knowledge can be valuable to many other games like Crossword Puzzles, Wheel of Fortune, etc. We can also have an investigation of very popular and commonly used letters in most of the words. Also, we can find out that the most popular letter in the English language is "e". The letter frequency of all letters in the English language is : e t a o i n s r h l d c u m f p g w y b v k x j q z.

CONCLUSION :

In the conclusion of this project, Hangman is a traditional game, typically played with words. It's possible, however, to play Category Hangman rather than guessing words the player might guess names of cities, or athletes, or fictional characters, or Duke professors, or top forty song titles the list is endless. You'll be writing a program to play a "guess a word letter-by-letter" version of hangman as shown above. You'll also be doing some statistical analysis of the words used in the Hangman game.

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[2]https://www.youtube.com/watch?v=NKVOPEjPHfiSA [3] https://www.youtube.com/watch?v=BDi3SD7E6no