BM 627-Virtual Instrumentation

Assignment 2: Hangman Game v1.1

August 4th Week, 2011

Assignment 2 is going to be fun ☺ We will be developing a game called Hangman. I assume most of you have heard of it. For those new to it, here's a brief description [from Wikipedia]:

One player thinks of a word and the other tries to guess it by suggesting letters. The word to guess is represented by a row of dashes; each dash indicating an alphabet. If the guessing player suggests a letter which occurs in the word, the other player writes it in all the positions that the alphabet is present. If the suggested alphabet 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
- The other player completes the diagram

This diagram is, in fact, designed to look like a hanging man and hence the name of the game.

Links for description and sample game:

- http://en.wikipedia.org/wiki/Hangman_(game)
- http://www.hangman.no/

A sample hangman game developed in LabWindows has been uploaded on Moodle along with this assignment. Please run the program to understand the requirements of the game mentioned below. Also some sample pictures you might need have also been provided. But you are most welcome and encouraged to use your own resources.

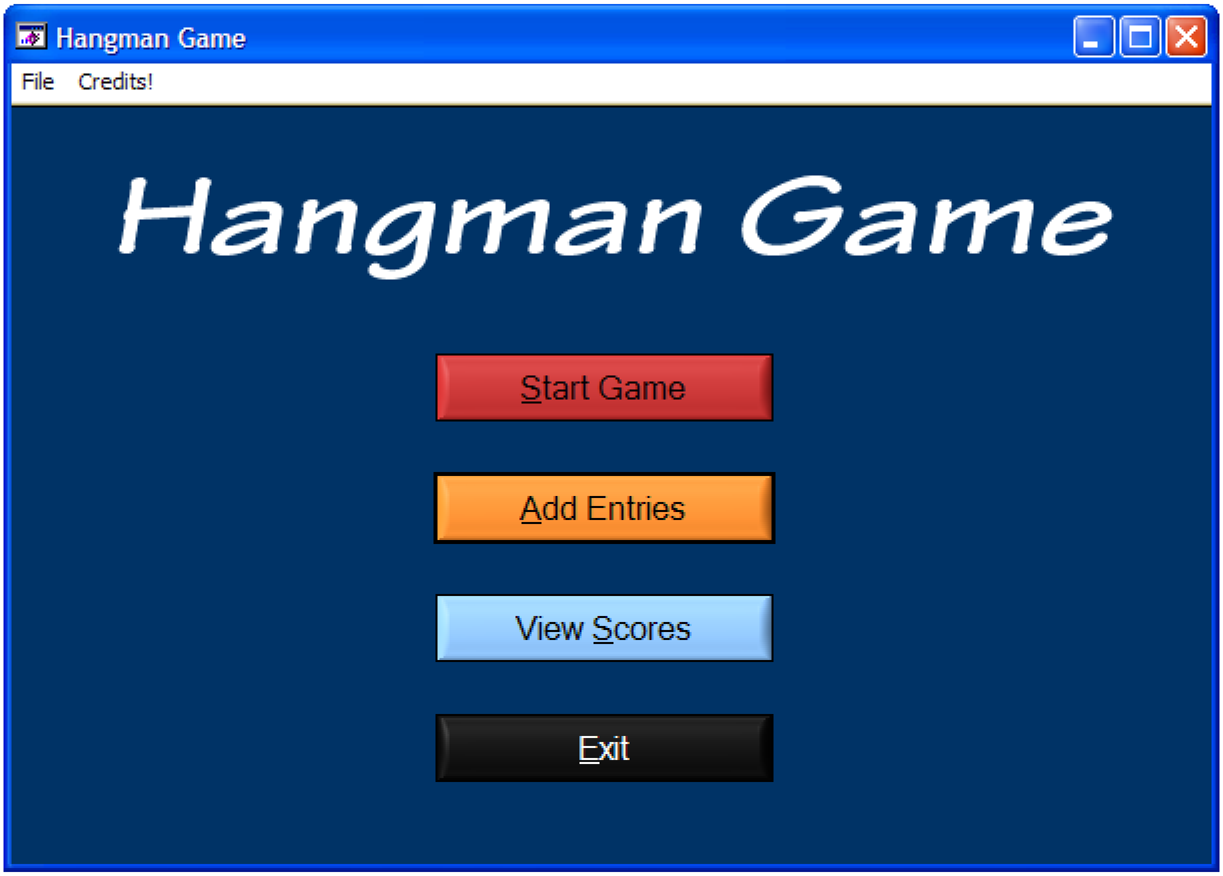
Note: The sample program is basic prototype for this assignment as is by no means intended to be the best/accurate/complete/final target of this assignment.

The game will need to have 2 text files **in the program folder**:

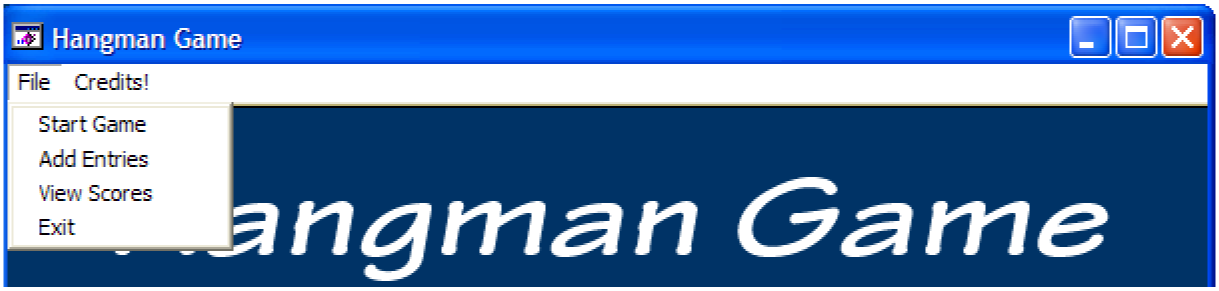
- Places.txt - contains list of all words (names of places here) to be used in game
- Scores.txt - contains scores of all games played

The game should start with a panel offering 4 options:

1. To start a new game
2. To add new entries in the game
3. To view scores of all games till now
4. To exit the program



This panel will also have a menu bar offering the same options listed above and also show Credits (as in earlier assignment):

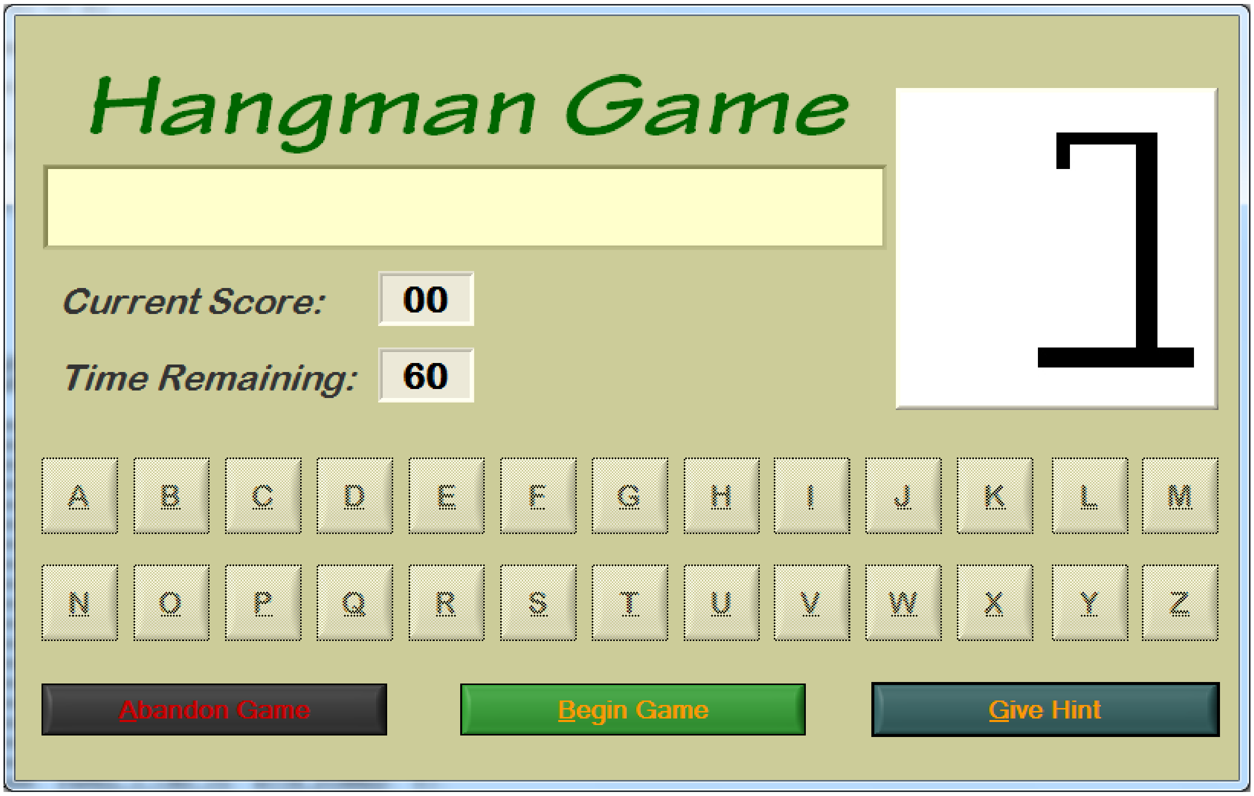


To start a new game

It should bring up a new panel with the game screen:

This panel should contain all the shown controls

1. The word box
2. The virtual keypad
3. Score and time display
4. The hangman picture
5. Three buttons for Abandon Game, Begin game and Hint



There should be options/functionality to implement following:

- Words should be selected by a random mechanism that also ensures that the same word is not repeated within one game
- Alphabets once guessed should have their buttons **dimmed** until the next word
- Hangman parts should be drawn on every wrong guess
- Decide how many incorrect guesses the user is allowed to make (We have provided 2 sets of images – 6 chances and 10 chances; but you are free to choose your own).

- Each round will have a time limit of 60 seconds. Guessing the word correctly should award 10 points to the user plus the time remaining should be added to the score. If all guesses finished then the game should terminate.
- Have an option for providing hint to the player (*Give Hint*). Using the hint should result in a penalty of 5 points.
- Facility to track score and display the same to the user (*Current Score*)
- Exit the game and return to main menu (*Abandon Game*)
- If all the words in file are used up then inform the user, store the score and end game
- For other nitty-gritty functionality, please run the program provided on Moodle

To add new entries in the game

Provide a new panel or pop-up for the user to add new words to the game. Ensure that existing words are not erased, duplicate words to be prevented and new words should be appended to the list. Provide appropriate feedback to the user for above cases. Also for each word entered an appropriate hint should also be stored (either in the same file or a different file). Words should not be case-sensitive.

To view scores of all games till now

Show a list of all scores recorded till data. Not necessary to have it ordered from highest to lowest scores (if you can do that great :).

To exit the program

Quit option with confirmation from user that whether user really wants to quit or not. This is mandatory for all the assignments.

You are most welcome to make changes and enhance the assignment with your own ideas as long as the basic functionality that has been described above is satisfied.

IMPORTANT: If you are adding any extra features please mention it in the assignment in a separate word document.

Suggestions for Bonus Features

- Provide option for selecting type of words: Places, Animals, Brands, Languages etc
- Let user decide the difficulty level based on:
    - ✓ Total time for each round
    - ✓ Number of incorrect guesses

- Ensure that no invalid characters (non-alphabetical) are entered by the user while inserting new words
- Give an option for the user to access the alphabets by clicking on the respective button on the screen or via keyboard (you can create keyboard shortcuts for that).
- Display scoring history, in the form or range of scores, of all past games using graphs