Sultan Qaboos University
College of Science - Department of Computer Science
COMP2002: Introduction to Computer Programming for Engineers
Fall 2010
HOMEWORK ASSIGNMENT 4

Due Date: 1ˢᵗ January 2011

STUDENT NAME: _____   **ID:**   _____

Section: _____   **Mark:** _____

Write a program that plays a game of hangman. The program starts by reading from an input file "hangman.txt" a list of secret words and stores them in an array of strings. The program then selects randomly one of the secret words to be guessed by the user. The program prints on the screen the number of letters of the secret word to be guessed in the form of successive stars (see example below). The player guesses the letters of the secret word one by one. At each step, the program prints on the screen the letters that have been guessed so far. The game terminates when either the entire word is guessed by the player or six incorrect guesses have been attempted. After finishing one game the program asks the user if he/she wants to play again. If the user wants to play again, the program selects again randomly a secret word from the stored list of words and the game is repeated.

Your program should define and use 3 functions to perform the following tasks:

1. Read the list of secret words from the input file "hangman.txt".
2. Find the number of occurrences and locations of a guessed letter.
3. Test if a game has terminated (either entire word guessed or six incorrect guesses attempted).

Name your program as HW4-ID.cpp and submit on Moodle the .cpp file only.

GRADING TABLE

No.	Item	0	0.5	1
1	Style (comments, naming, indentation)			
2	Includes and declarations (other than arrays)			
3	Array declarations			
4	Input file handling (opening, reading, testing end of file)			
5	Correctness and format of interactive input/output			
6	Error checking in reading a letter (only letters accepted)			
7	Random selection of secret word			
8	Find number of occurrences and locations of guessed letter			
9	Game termination test (word fully guessed or 6 incorrect guesses)			
10	Handling game repetition (user chooses to play again or to stop)			

Sample execution for the word "rhythm" read from the input file:

Hi, let's play hangman.
The secret word is:
******
Guess a letter: a
Letter a is not part of the secret word.
******
Guess a letter: h
Letter h exists 2 time(s) in the secret word.
*h**h*
Guess a letter: ?
Sorry '?' is not a letter.
*h**h*
Guess a letter: e
Letter e is not part of the secret word.
*h**h*
Guess a letter: r
Letter r exists 1 time(s) in the secret word.
rh**h*
Guess a letter: s
Letter s is not part of the secret word.
rh**h*
Guess a letter: t
Letter t exists 1 time(s) in the secret word.
rh*th*
Guess a letter: y
Letter y exists 1 time(s) in the secret word.
rhyth*
Guess a letter: m
Letter m exists 1 time(s) in the secret word.
rhythm

Bravo! You have guessed the full secret word.

Do you want to play again? (Y/N): N

THANK YOU FOR PLAYING HANGMAN.