

BIL105E - Homework 1

Due date : 14.03.2012 20:00

g++ compilable CPP codes and reports should be uploaded to ninova.

In this homework you are asked to write a program that plays “Guess the number” game with the computer. Your program starts with asking the user if she/he wants to guess the number that computer holds between 1-100 or if she/he wants to hold the number and let the computer guess. In each case the number holder is going to give the guesser a clue. The clue tells if the recently guessed number is greater than or less than the number being hold.

Here are two example sessions. User guesses

```
Would you like to guess or should computer guess? (H/C): H
Guess my number: 50
Nope, my number is greater than 50
Guess my number: 75
Nope, my number is less than 75
Guess my number: 62
Nope, my number is greater than 62
Guess my number: 68
Nope, my number is less than 68
Guess my number: 65
Nope, my number is greater than 65
Guess my number: 66
Congrats! You've found it in 6 guesses! My number is 66
```

Now computer guesses. User holds 95 (and he is honest)

```
Would you like to guess or should computer guess? (H/C): C
I guess 14
Am I right?(Y/L/H): H
I guess 85
Am I right?(Y/L/H): H
I guess 88
Am I right?(Y/L/H): H
I guess 96
Am I right?(Y/L/H): L
I guess 90
Am I right?(Y/L/H): H
I guess 95
Am I right?(Y/L/H): Y
Haha! I've found it! It took me 6 guesses
```

During the user session user gives clues by typing ‘L’ for less ‘H’ for high and ‘Y’ for yes.

You are expected to check for the user input as well. The user may type different letters than expected by mistake or type letters instead of numbers or input number out of range(1-100).

Here is a skeleton code that you might find useful to follow.

```
#include<iostream>

using namespace std;

int main(){

    string choice;

    srand(time(NULL));

    cout<<"Would you like to guess or should computer guess? (H/C): ";
    cin>>choice;

    if(/*Check user choice, if user chooses to guess*/){
        /*Declare necessary variables and produce a random number*/

        while(/*Check if the guess is right*/){
            //Read user's guess
            /*Check if the guess is right and prompt the user*/
        }

    }
    else if(/*Check user choice, if user chooses to hold*/
        /*Declare necessary variables, a lower and upper limit
        for computer guesses. 1-100 initially.*/
        while(/*The guess is not right*/){
            //Make a new random guess between the lower
            //and upper limits
            //ask the user for a hint
            /*Update the lower or upper limit if the guess is wrong
        }
    }

    return 0;
}
```

In the homework you are going to produce random numbers oftenly. In C++, to produce a random number you need to call

```
srand(time(NULL))
```

function once in the beginning. Later to produce a random number you should call rand() and use modulo operator to limit the random number that is produced. For instance to produce a random number between 0 and 19 you may use the function like

```
rand()%20
```

Another example is to produce a random number between 10 and 39; you should use the function like

```
10 + rand()%40.
```

Note: Please be aware that any attempt on academic dishonesty and cheating will be subject to official penalties.