Exercise 1: Menu Program

Using NESTED IF/ELSE statements, develop a program that gives the user the option to choose between one of the following operations:

1- Test whether a given number is odd or even
2- Test whether a given number is divisible by another number

In case the choice entered by the user is different from the available options (1 and 2), your program should print “Input Error! Try again later”. Samples of input/output are given below.

Sample of input/output 1
Make choice:
1- Test whether a given number is odd or even
2- Test whether a given number is divisible by another number
Choice: 1
Enter a number: 7
7 is an odd number

Sample of input/output 2
Make choice:
1- Test whether a given number is odd or even
2- Test whether a given number is divisible by another number
Choice: 1
Enter a number: 8
8 is an even number

Sample of input/output 3
Make choice:
1- Test whether a given number is odd or even
2- Test whether a given number is divisible by another number
Choice: 2
Enter first number: 8
Enter second number: 2
2 divides 8

Sample of input/output 4
Make choice:
1- Test whether a given number is odd or even
2- Test whether a given number is divisible by another number
Choice: 2
Enter first number: 8
Enter second number: 3
3 doesn’t divide 8

Sample of input/output 5
Make choice:
1- Test whether a given number is odd or even
2- Test whether a given number is divisible by another number
Choice: 4
Input Error! Try again later

Exercise 2: Lowest/Highest Number

Using NESTED IF/ELSE statements, develop a program that reads two integer values from the user and print the following:

- If the first number is equal to the second number, your program should print “Both numbers are equal”
- Otherwise, it should print the lowest number followed by the message “is the lowest”, and the highest number followed by the message “is the highest”

Sample input/output 1:
Enter first number: 25
Enter second number: 25
Both numbers are equal

Sample input/output 2:
Enter first number: 25
Enter second number: 10
10 is the lowest
25 is the highest

Exercise 3: Guessing Game

Using NESTED IF/ELSE statements , develop a program that simulates a guessing game.
In this game the program generates a random number between 1 and 5, and the player tries to guess the number. The program tells the player whether the guess is right, too low, or too high by printing the following messages:

- If the guessed number is equal to the generated number, the program should print “Congratulations! You win”
- If the guessed number is less than the generated number, the program should print “Try again! entered number < generated number”
- If the guessed number is greater than the generated number, the program should print “Try again! entered number > generated number”

Sample input/output 1 (case of generated number = 2)
Enter a guess: 2
Congratulations! You win

Sample input/output 2 (case of generated number = 4)
Enter a guess: 3
Try again! 3< 4

Sample input/output 3 (case of generated number = 3)
Enter a guess: 5
Try again! 5>3

Hint:
Example: program that will print a random value between 2 and 5 inclusive

```
#include<iostream>
#include<time.h>
using namespace std;
int main (){
int number, min = 2, max = 5;
srand(time(NULL));
number = (rand()%(max-min+1)) + min;
cout<<number<<endl;
return 0;
}
```

rand: Generate random number
Returns a pseudo-random integral number in the range between 0 and RAND_MAX.

RAND_MAX:
This value is library-dependent, but is guaranteed to be at least 32767 on any standard library implementation.

srand: Initialize random number generator
The pseudo-random number generator is initialized using the argument passed as seed.

Formula to generate a random value between min and max inclusive
int number = (rand()%(max-min+1)) + min;