National University of Sciences & Technology (NUST)
Baluchistan Campus (NBC), Quetta

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Department: Computer Sciences

Instructor: Sir Rozi Khan

Name of Assignment: Lab Number 06 Assignment.

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Subject: Fundamental of prog. (Lab)

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Task Number One: Change the code so that it locks them out after 4 tries instead of 3. Make sure to change the message at the bottom, too. Move the "maximum tries" value into a variable and use that variable everywhere instead of just the number.

```
#include<iostream>
using namespace std;
int main()
{
    int pin = 29202, entry, tries = 0;
    cout << "Welcome to NBC Bank\n\n";
    cout << "Enter your Pin: ";
    cin >> entry;
    tries++;
    while (entry != pin && tries < 4)
    {
        cout << "Your pin is incorrect, please try again \n";
        cout << "Enter your pin: ";
        cin >> entry;
        tries++;
    }
    int triesCounter = tries;
    if (entry == pin && tries <= 3)
    {
        cout << "Your pin is correct and you have access to your account.\n";
    }
    else
    {
        cout << "You have entered " << triesCounter << " incorrect pins. So, your account has been locked!\n";
    }
    system("pause");
    return 0;
}
```

```
Welcome to NBC Bank

Enter your Pin: 1231
Your pin is incorrect, please try again!
Enter your pin: 233432
Your pin is incorrect, please try again!
Enter your pin: 234324
Your pin is incorrect, please try again!
Enter your pin: 23432
You have entered 4 incorrect pins. So, your account has been locked!
Press any key to continue . . .
```

Task Number Two: Write a program that plays a number-guessing game. The user will try to guess the secret number until they get it right. That means it will keep looping as long as the guess is different from the secret number. You must store the secret number in a variable and use that variable throughout for checks. Use any of the loops to run it multiple times.

```cpp
#include<iostream>
using namespace std;
int main()
{
    cout << "Welcome to NUMBER GUESSING GAME.\n";
    int secretNumber = 9, guessedNumber;
    cout << "I have chosen a number between 1 to 10. Try to guess it\n";
    do {
        cout << "Your Guess: ";
        cin >> guessedNumber;
        if (guessedNumber == secretNumber) {
            cout << "That's right! You guessed it.\n";
        }
        else {
            cout << "That is incorrect! Try again.\n";
        }
    } while (guessedNumber != secretNumber);


    system("pause");
    return 0;
}
```

C:\Users\Muhammad\Desktop\taskNumberTwo\x64\Debug\taskNumberTwo.exe

```
I have chosen a number between 1 to 10. Try to guess it
Your Guess: 21
That is incorrect! Try again.
Your Guess: 323
That is incorrect! Try again.
Your Guess: 45345
That is incorrect! Try again.
Your Guess: 5
That is incorrect! Try again.
Your Guess: 3
That is incorrect! Try again.
Your Guess: 5
That is incorrect! Try again.
Your Guess: 6
That is incorrect! Try again.
Your Guess: 7
That is incorrect! Try again.
Your Guess: 2
That is incorrect! Try again.
Your Guess: 1
That is incorrect! Try again.
Your Guess: 4
That is incorrect! Try again.
Your Guess: 5
That is incorrect! Try again.
Your Guess: 6
That is incorrect! Try again.
Your Guess: 76
That is incorrect! Try again.
Your Guess: 435
That is incorrect! Try again.
Your Guess: 56765
That is incorrect! Try again.
Your Guess: 65
That is incorrect! Try again.
Your Guess: 76
That is incorrect! Try again.
Your Guess: 756
That is incorrect! Try again.
Your Guess: 76
That is incorrect! Try again.
Your Guess: 7
That is incorrect! Try again.
Your Guess: 56
That is incorrect! Try again.
Your Guess: 9
That's right! You guessed it.
Press any key to continue . . .
```

Task Number Three: Modify your previous number-guessing game to NumberGuessingWithACounter.c so that they can guess until they get it right and count the number of tries it takes them to guess it

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      cout << "Welcome to NUMBER GUESSING GAME.\n";
6      int secretNumber = 9, guessedNumber, triesCounter=0;
7      cout << "I have chosen a number between 1 to 10. Try to guess it\n";
8      do {
9          cout << "Your Guess: ";
10         cin >> guessedNumber;
11         if (guessedNumber == secretNumber) {
12             cout << "That's right! You guessed it.\n";
13             cout << "It only take you " << triesCounter << " tries.\n ";
14         }
15         else {
16             cout << "That is incorrect! Try again.\n";
17             triesCounter++;
18         }
19     } while (guessedNumber != secretNumber);
20
21
22     system("pause");
23     return 0;
24 }
```

```
C:\Users\Muhammad\Desktop\taskNumber3\x64\Debug\taskNumber3.exe
Welcome to NUMBER GUESSING GAME.
I have chosen a number between 1 to 10. Try to guess it
Your Guess: 1
That is incorrect! Try again.
Your Guess: 2
That is incorrect! Try again.
Your Guess: 3
That is incorrect! Try again.
Your Guess: 4
That is incorrect! Try again.
Your Guess: 5
That is incorrect! Try again.
Your Guess: 6
That is incorrect! Try again.
Your Guess: 7
That is incorrect! Try again.
Your Guess: 8
That is incorrect! Try again.
Your Guess: 9
That's right! You guessed it.
It only take you 8 tries.
 Press any key to continue . . .
```

Task Number Four: Factorial The factorial of an integer n, written n! is simply the product of all the integers from 1 to n. For example, 5! = 1*2*3*4*5 = 120. Write a program using while loop to calculate the factorial of an integer n taken input from the user.

```
1   #include<iostream>
2   using namespace std;
3   int main() {
4       long int number=0, factorial = 1, counter=1;
5       cout << "Enter a number for its factorial: ";
6       cin >> number;
7       while (counter <= number)
8       {
9           factorial = factorial * counter;
10          counter = counter + 1;
11      }
12      cout << factorial << endl;
13
14      system("pause");
15      return 0;
16  }
```

```
C:\Users\Muhammad\Desktop\taskNumberFour\x64
Enter a number for its factorial: 5
120
Press any key to continue . . .
```