

Computing Fundamentals & Programming

Section: BSCE2021

Assignment # 5

Total marks: 100

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Submission:

- Email instructor or TA if there are any questions. You cannot look at others' solution or use others' solution, however, you can discuss it with each other. Plagiarism will lead to a straight zero with additional consequences as well.
- Submission after due time will not be accepted.
- Only working code shall be awarded marks.

TASK 1

[25 marks]

Write a program using while loop to print the output as shown below:

1 2 3 4 5

1 3 5 7 9

1 4 7 10 13

```
void tabSeq() {  
    int count = 1;  
    int odd = 1;  
    int misc = 1;  
    while (count <= 4) {  
        cout << count << " ";  
        count++;  
    }  
    if (count == 5) {  
        cout << count << endl;  
    }  
    while (odd <= 8) {  
        cout << odd << " ";  
        odd = odd + 2;  
    }  
    if (odd == 9) {  
        cout << odd << endl;  
    }  
    while (misc <= 13) {  
        cout << misc << " ";  
        misc = misc + 3;  
    }  
    cout << endl;  
}
```

Output:

```
De1l@DESKTOP-OCAJSMG ~  
$ cd /cygdrive/d/Programming/GitHub/2021-fall-week5-assignment5-bsce21017  
  
De1l@DESKTOP-OCAJSMG /cygdrive/d/Programming/GitHub/2021-fall-week5-assignment5-bsce21017  
$ make run  
rm -f *.out  
g++ -std=c++11 main.cpp Functions.cpp -o r.out  
./r.out  
1 2 3 4 5  
1 3 5 7 9  
1 4 7 10 13
```

TASK 2

[25 marks]

Write a program that inputs a number in main function, and passes that number to a function named as printTable. Function prints the table of that number using for loop.

```
void printTable(int table) {  
    for (int i = 1; i <= 10; i++) {  
        int mul = table * i;  
        cout << table << "x" << i << "=" << mul << endl;  
    }  
}
```

Output:

```
Enter the number to print the table:  
13  
Table of the required number is following:  
13x1=13  
13x2=26  
13x3=39  
13x4=52  
13x5=65  
13x6=78  
13x7=91  
13x8=104  
13x9=117  
13x10=130
```

TASK 3

[25 marks]

Write a program that inputs a number and a character in main function, and passes them to a function named as printSquare using for loop. It then displays a square of that entered character against the number of rows user entered.

e.g if user enter 4 and @, it displays output as follows:

```
@ @ @ @
@ @ @ @
@ @ @ @
@ @ @ @
```

```
void printSquare(char chare, int row) {
    int a;
    for (int i = 1; i <= row; i++) {
        while (a <= row) {
            cout << chare;
            a++;
        }
        a = 1;
        cout << endl;
    }
}
```

Output:

```
Enter the number of rows you want to print: 4
Enter the character you want to print: @
@@@@
@@@@
@@@@
@@@@
```

TASK 4

[25 marks]

Write a function named as printTables that takes a number as parameter and prints tables of three consecutive numbers using nested for loops.

(e.g if 12 is taken as input then it prints tables of 12, 13 and 14)

```
void printTables(int table) {
    int pseudo = table + 2;
    while (table <= pseudo) {
        cout << endl;
        cout << "Table of " << table << ": " << endl;
        for (int i = 1; i <= 10; i++) {
            int mul = table * i;
            cout << table << "x" << i << "=" << mul << endl;
        }
        table++;
    }
}
```

Output

Enter any number to print tables of three consecutive numbers: 12

Table of 12:

12x1=12
12x2=24
12x3=36
12x4=48
12x5=60
12x6=72
12x7=84
12x8=96
12x9=108
12x10=120

Table of 13:

13x1=13
13x2=26
13x3=39
13x4=52
13x5=65
13x6=78
13x7=91
13x8=104
13x9=117
13x10=130

Table of 14:

14x1=14
14x2=28
14x3=42
14x4=56
14x5=70
14x6=84
14x7=98
14x8=112
14x9=126
14x10=140