

## Computing Fundamentals & Programming

Section: BSCE2021

Assignment # 5

Total marks: 100

Name : Nimra maqbool

Roll number : \_bsce21012

### **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

Function.cpp

```
int printNumbers ()
{
    int i=1;
    while(i<=5)
    {
        cout<<i<<" ";
        i++;
    }
    cout<<"\n";
    int n=1;
    while(n<=9)
    {
        cout<<n<<" ";
        n=n+2;
    }
    cout<<"\n";
    int m=1;
    while(m<=13)
    {
```

```

    {
        cout<<m<<" ";
        m=m+3;
    }
}
main.cpp

```

```

int main() {
    printNumbers ();
}

```

Output

```

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.

Function.cpp

```

void printTable(int n)
{
    int t=1;
    cout<<"Table of " <<n<<" is: " <<endl;
    for(int i=1; i<=10; i++)
    {
        t=n*i;

        cout<<n <<" * " <<i <<" = " <<t <<endl;
    }
}

```

Main.cpp

```

int n;
cout<<"Enter Number: ";
cin>>n;
printTable( n);

```

Output

```

Enter Number: 2
Table of 2 is:

```

```
2 * 1 = 2
2 * 2 = 4
2 * 3 = 6
2 * 4 = 8
2 * 5 = 10
2 * 6 = 12
2 * 7 = 14
2 * 8 = 16
2 * 9 = 18
2 * 10 = 20
```

### 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:

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

Function.cpp

```
void printSquare (int number, char ch)
{
    for(int i=1; i<=number; i++)
    {
        for(int j=1; j<=number; j++)
        {
            cout<<ch;
        }
        cout<<endl;
    }
}
```

Main.cpp

```
int number;
```

```
char ch;
cout<<"display a pattern of square using the char:"<<endl;
cin>>ch;
cout<<"please enter the number of char for a side:"<<endl;
cin>>number;
printSquare ( number, ch);
```

#### Output

```
display a pattern of square using the char:
@
please enter the number of char for a side:
4
@@@@
@@@@
@@@@
@@@@
```

#### 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)

### Function.cpp

```
void printTables (int num)
{
    for(int input=1; input<=3; input++)
    {
        int t=1;
        for(int i=1; i<=10; i++)
        {
            t=num*i;
            cout<<num <<" * " <<i <<" = " <<t <<endl;
        }
        cout<<endl;
        num=num+1;
    }
}
```

### Main.cpp

```
int num;
cout<<"Enter Number as input: ";
cin>>num;
printTables ( num);
```

### Output

```
Enter Number as input: 12
```

```
12 * 1 = 12
12 * 2 = 24
12 * 3 = 36
12 * 4 = 48
12 * 5 = 60
12 * 6 = 72
12 * 7 = 84
12 * 8 = 96
12 * 9 = 108
12 * 10 = 120
```

```
13 * 1 = 13
13 * 2 = 26
13 * 3 = 39
13 * 4 = 52
13 * 5 = 65
13 * 6 = 78
13 * 7 = 91
13 * 8 = 104
13 * 9 = 117
13 * 10 = 130
```

```
14 * 1 = 14
```

```
14 * 2 = 28
14 * 3 = 42
14 * 4 = 56
14 * 5 = 70
14 * 6 = 84
14 * 7 = 98
14 * 8 = 112
14 * 9 = 126
14 * 10 = 140
```