Assignment # 1

Submission Date: 28th September 2022
Subject: CS4002- Applied Programming.

1. State the order of evaluation of the operators in each of the following C++ statements and show the value of x after each statement is performed.
   a) **x = 7 + 3 * 6 / 2 - 1;** **Ans: *, /, +, -, =, 15 (Example)**
   b) **x = 2 % 2 + 2 * 2 - 2 / 2;** **Ans:**
   c) **x = (3 * 9 * (3 + (9 * 3 / (3))));** **Ans:**

2. Write a program that finds the GPA?
3. Write a program that solve quadratic equation.
4. Write a program that prints prime no's from 1 to 100?
5. Write a program that reverses any given no? Use Divide by 10 rule?
6. Write a program that prints the following shapes using escape sequences and loops:

a)
```
*
**
***
****
*****
******
*******
```

b)
```
*******
******
*****
****
***
**
*
```

c)
```
      *
     **
    ***
   ****
  *****
 ******
*******
```

d)
```
*******
 ******
  *****
   ****
    ***
     **
      *
```

e)

```
**********
*        *
*        *
*        *
**********
```

f)

```
    *
   ***
  *****
 *******
*********
```

g)

```
*********
 *******
  *****
   ***
    *
```

h)

```
9       7       5       3       1
        9       7       5
                9
                9
        9       7       5
9       7       5       3       1
```

7. Write a program for Fibonacci series using recursion?

(Fibonacci series is that when you add the previous two numbers the next number is formed. You have to start from 0 and 1.)

E.g. 0+1=1 → 1+1=2 → 1+2=3 → 2+3=5 → 3+5=8 → 5+8=13

So the series becomes

0 1 1 2 3 5 8 13 21 34 55 ……

Steps: You have to take an input number that shows how many terms to be displayed. Then use loops for displaying the Fibonacci series up to that term

E.g. input no is =6 the output should be

0 1 1 2 3 5

8. Identify and correct the error(s) in each of the following:

a) **if (age >= 65);**
cout << "Age is greater than or equal to 65" << endl;
else
cout << "Age is less than 65 << endl";
ANS:

b) **if (age >= 65)**
cout << "Age is greater than or equal to 65" << endl;
else;
cout << "Age is less than 65 << endl";
ANS:

c) **if (age >= 65)**
cout << "Age is greater than or equal to 65" << endl;
cout<< " Time to retire";
else;
cout << "Age is less than 65 << endl";
ANS:

d) **int x = 1, total;**
while (x <= 10) {
total += x;
++x;
}
ANS:

e) **While (x <= 100)**
total += x;
++x;
ANS:

f) **while (y > 0) {**
cout << y << endl;
++y;
}
ANS:

9. What does the following program print?
using std::cout;

```
using std::endl;
int main()
 {
  int y, x = 1, total = 0;

  while ( x <= 10 ) {
       y = x * x;
       cout << y << endl;
       total += y;
       ++x;
       }

 cout << "Total is " << total << endl;
 return 0;
}
```