

FUNDAMENTALS OF PROGRAMMING

LAB MANUAL 5

LAB TASK

ABDUL MOIZ 464834 SECTION B

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
//{ Task # 1
//    int x = 1;
//    do
//    {
//        cout << "enter a number ";
//        cin >> x;
//    } while (x > 0);
//        return 0;
//}
```

```
Microsoft Visual Studio Debug Console
enter a number 4
enter a number 0

E:\Mechanical Engineering\Semester 1\FOP\Assignments\
To automatically close the console when debugging stops.
Press any key to close this window . . .
```

//{ Task # 2

```
//    int x, y, z, a;
//    char operation;
//
//    do
//    {
//        cout << "Enter 1st number : ";
//        cin >> x;
//        cout << "Enter 2nd number : ";
//        cin >> y;
//        cout << "Enter operation : ";
//        cin >> operation;
//        switch (operation)
//        {
//            case '+':
//                z = x + y;
//                break;
```

```
//      case'-':  
//          z = x - y;  
//          break;  
//      case'*':  
//          z = x * y;  
//          break;  
//      case'/':  
//          if (y != 0)  
//          {  
//              z = x / y;  
//          }  
//          else if (y == 0)  
//          {  
//              cout << "invalid";  
//          }  
//          break;  
//      case'%':  
//          if (y != 0)  
//          {  
//              z = x % y;  
//          }  
//          else if (y == 0)
```

```
//      {
//      cout << "invalid";
//      }
//      break;
//      case'^':
//      z = pow(x, y);
//      break;
//      }
//      cout <<"Answer = "<< z << endl;
//      cout << "For again computation press 7" << endl;
//      cout << "If not then press any number but not 7" << endl;
//      cin >> a;
//      } while (a == 7);
//      return 0;
//}
```

```
Microsoft Visual Studio Debug Console
Enter 1st number : 67
Enter 2nd number : 3
Enter operation : *
Answer = 201
For again computation press 7
If not then press any number but not 7
7
Enter 1st number : 3
Enter 2nd number : 4
Enter operation : ^
Answer = 81
For again computation press 7
If not then press any number but not 7
1

E:\Mechanical Engineering\Semester 1\FOP\Assignments\LT 5\
To automatically close the console when debugging stops, en
le when debugging stops.
Press any key to close this window . . .
```

//{ Task # 3 (a)

```
// int i=0, x=0;
```

```
// while (i <= 100)
```

```
// {
```

```
//     if (i % 2 == 0)
```

```
//     {
```

```
//         x = x + i;
```

```
//     }
```

```
//     i++;
```

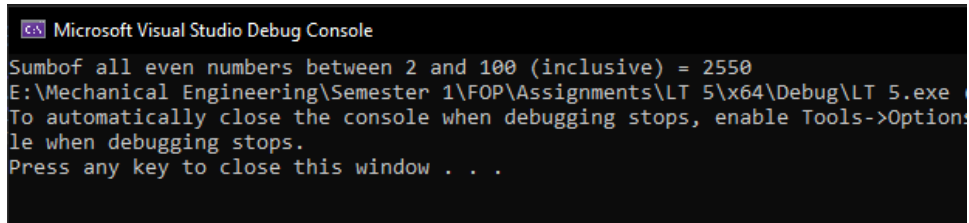
```
// }
```

```
// cout << "Sum of all even numbers between 2 and 100 (inclusive)
```

```
= " << x;
```

```
// return 0;
```

```
//}
```



```
Microsoft Visual Studio Debug Console
Sum of all even numbers between 2 and 100 (inclusive) = 2550
E:\Mechanical Engineering\Semester 1\FOP\Assignments\LT 5\x64\Debug\LT 5.exe (
To automatically close the console when debugging stops, enable Tools->Options
le when debugging stops.
Press any key to close this window . . .
```

```
//{// Task # 3 (b)
```

```
//    int a=1, b=0;
```

```
//    while (a <= 100)
```

```
//    {
```

```
//        b = b + pow(a,2);
```

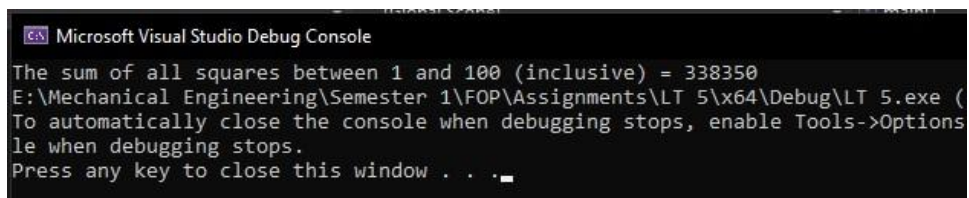
```
//        a++;
```

```
//    }
```

```
//    cout << "The sum of all squares between 1 and 100 (inclusive) = "
<< b;
```

```
//    return 0;
```

```
//}
```



```
Microsoft Visual Studio Debug Console
The sum of all squares between 1 and 100 (inclusive) = 338350
E:\Mechanical Engineering\Semester 1\FOP\Assignments\LT 5\x64\Debug\LT 5.exe (
To automatically close the console when debugging stops, enable Tools->Options
le when debugging stops.
Press any key to close this window . . .
```

```
//{// Task # 4 (a)
```

```
//    int s = 2, d = 0,f;
```

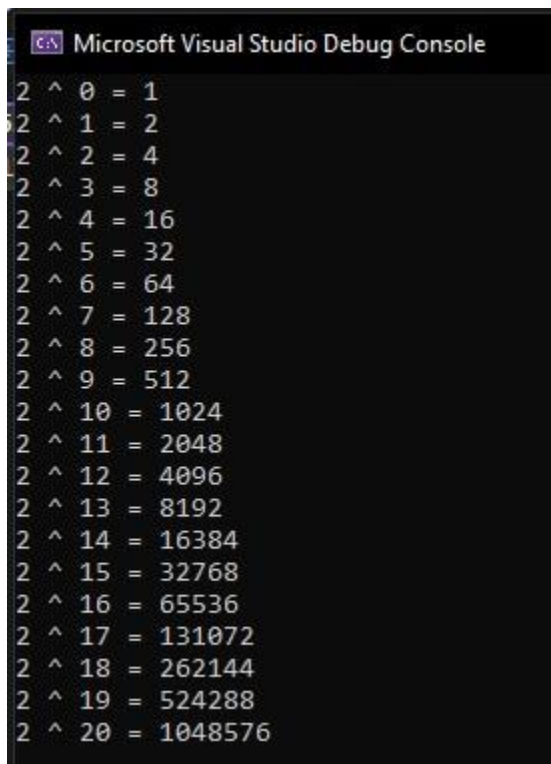
```
//    while (d <= 20)
```

```
//    {
```

```

//      f = pow(s, d);
//      cout << "2 ^ " << d << " = " << f << endl;
//      d++;
//  }
//  return 0;
//}

```



The screenshot shows the Microsoft Visual Studio Debug Console with a list of 21 lines of output, each representing a power of 2. The text is as follows:

```

2 ^ 0 = 1
2 ^ 1 = 2
2 ^ 2 = 4
2 ^ 3 = 8
2 ^ 4 = 16
2 ^ 5 = 32
2 ^ 6 = 64
2 ^ 7 = 128
2 ^ 8 = 256
2 ^ 9 = 512
2 ^ 10 = 1024
2 ^ 11 = 2048
2 ^ 12 = 4096
2 ^ 13 = 8192
2 ^ 14 = 16384
2 ^ 15 = 32768
2 ^ 16 = 65536
2 ^ 17 = 131072
2 ^ 18 = 262144
2 ^ 19 = 524288
2 ^ 20 = 1048576

```

//{// Task # 4 (b)

```

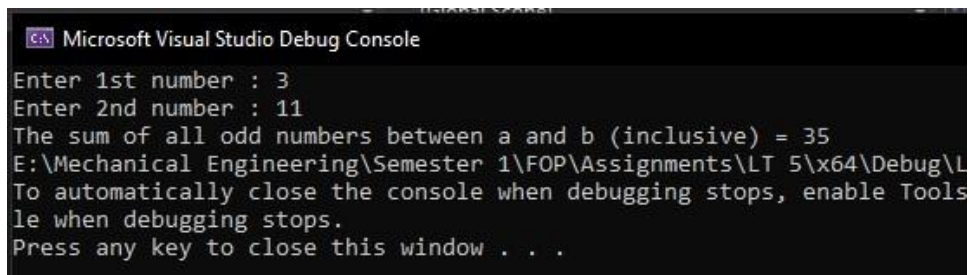
//  int a, b, c=0;
//  cout << "Enter 1st number : ";
//  cin >> a;
//  cout << "Enter 2nd number : ";
//  cin >> b;

```

```

//    while (a <= b)
//    {
//        if (a%2==1)
//        {
//            c = c + a;
//        }
//        a++;
//    }
//    cout << "The sum of all odd numbers between a and b (inclusive)
= " << c;
//    return 0;
//}

```



The screenshot shows the Microsoft Visual Studio Debug Console with the following text:

```

Enter 1st number : 3
Enter 2nd number : 11
The sum of all odd numbers between a and b (inclusive) = 35
E:\Mechanical Engineering\Semester 1\FOP\Assignments\LT 5\x64\Debug\L
To automatically close the console when debugging stops, enable Tools
le when debugging stops.
Press any key to close this window . . .

```