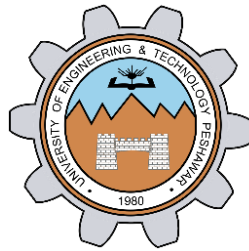**ITERATION STATEMENTS AND**

JUMP STATEMENTS

LAB # 4

Spring 2022

CSE102L Computer Programming Lab

Submitted by: **Ali Asghar**

Registration No. : **21PWCSE2059**

Class Section: **C**

"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Student Signature: _____

Submitted to:

Engr. Abdullah Hamid

July 4, 2022

Department of Computer Systems Engineering

University of Engineering and Technology, Peshawar
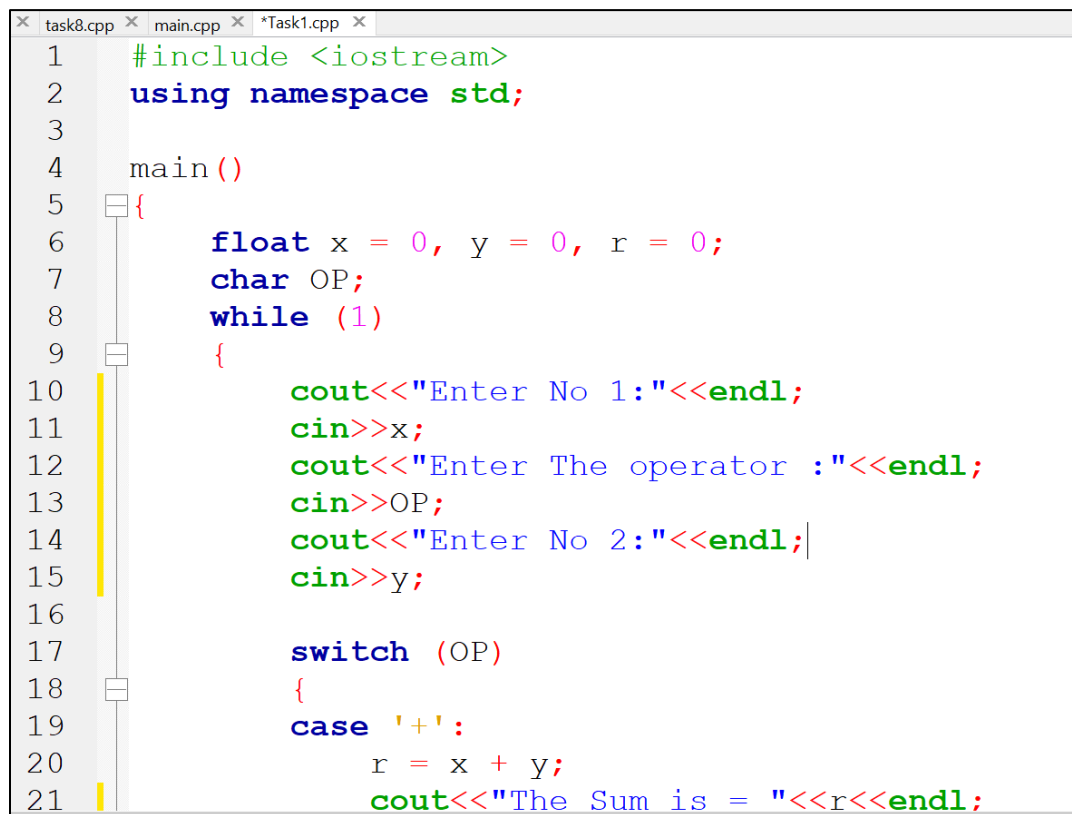
Lab Objective(s)

- To understand the programming using iteration statements like while, do-while and for Loop and jump statements like continue, break, return and goto statement.
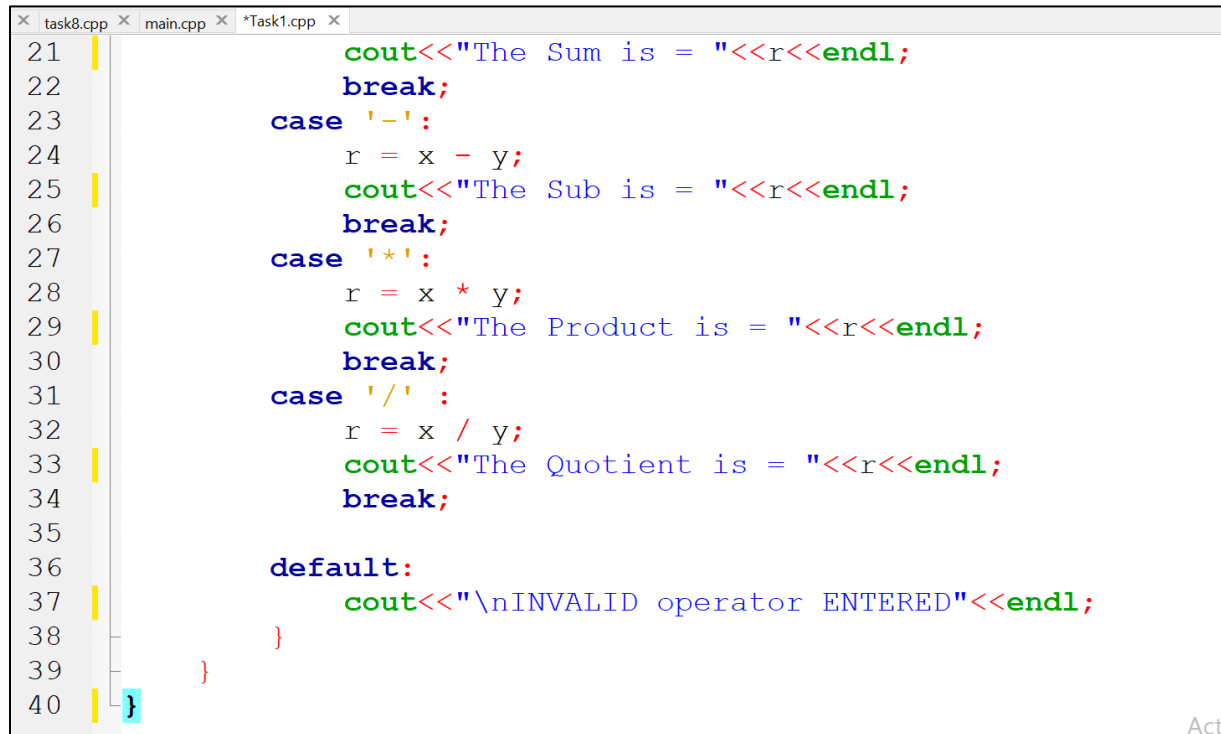
TASK # 1:

Title:

Write a program to create Simple Calculator using switch case….output from the previous inputs).

CODE SCREENSHOTS:

Here are the screenshots of the code.

```cpp
#include <iostream>
using namespace std;

main()
{
    float x = 0, y = 0, r = 0;
    char OP;
    while (1)
    {
        cout<<"Enter No 1:"<<endl;
        cin>>x;
        cout<<"Enter The operator :"<<endl;
        cin>>OP;
        cout<<"Enter No 2:"<<endl;
        cin>>y;

        switch (OP)
        {
        case '+':
            r = x + y;
            cout<<"The Sum is = "<<r<<endl;
```

```
21              cout<<"The Sum is = "<<r<<endl;
22              break;
23          case '-':
24              r = x - y;
25              cout<<"The Sub is = "<<r<<endl;
26              break;
27          case '*':
28              r = x * y;
29              cout<<"The Product is = "<<r<<endl;
30              break;
31          case '/' :
32              r = x / y;
33              cout<<"The Quotient is = "<<r<<endl;
34              break;
35
36          default:
37              cout<<"\nINVALID operator ENTERED"<<endl;
38          }
39      }
40  }
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):
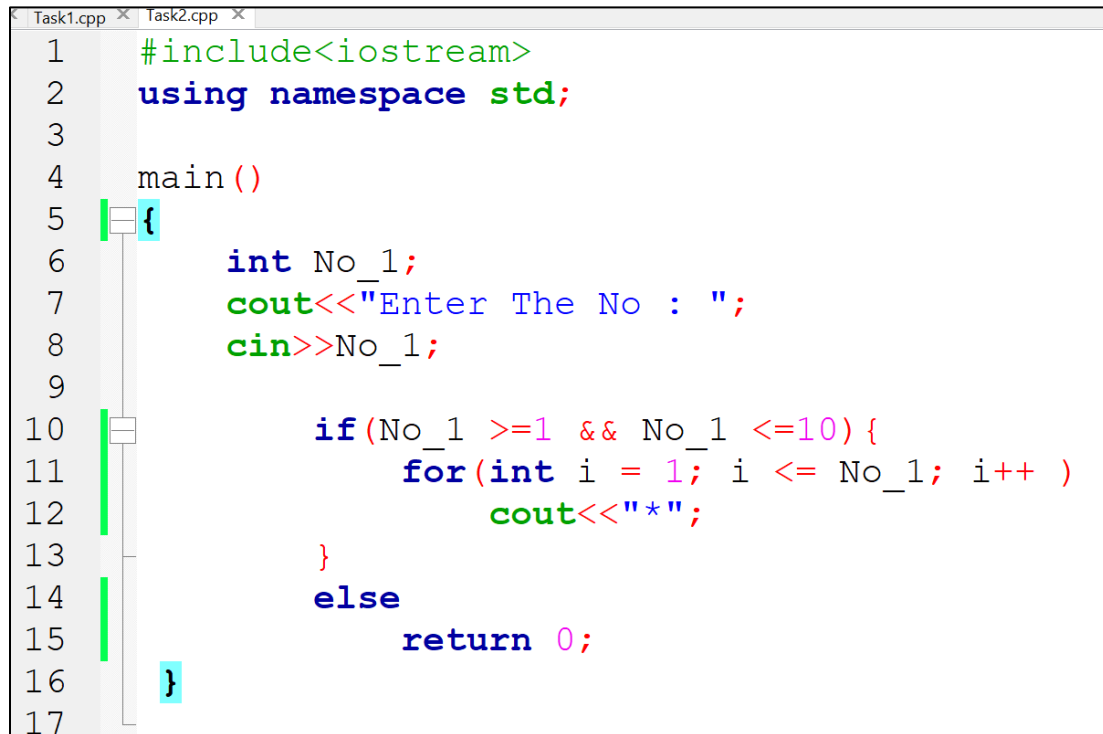
Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 1\Task1.exe"
Enter No 1:
32
Enter The operator :
*
Enter No 2:
34
The Product is = 1088
Enter No 1:
74
Enter The operator :
+
Enter No 2:
18
The Sum is = 92
Enter No 1:
```

TASK # 2:

Title:

Write a program that takes a number as input, checks it if it is between.........the program should end.
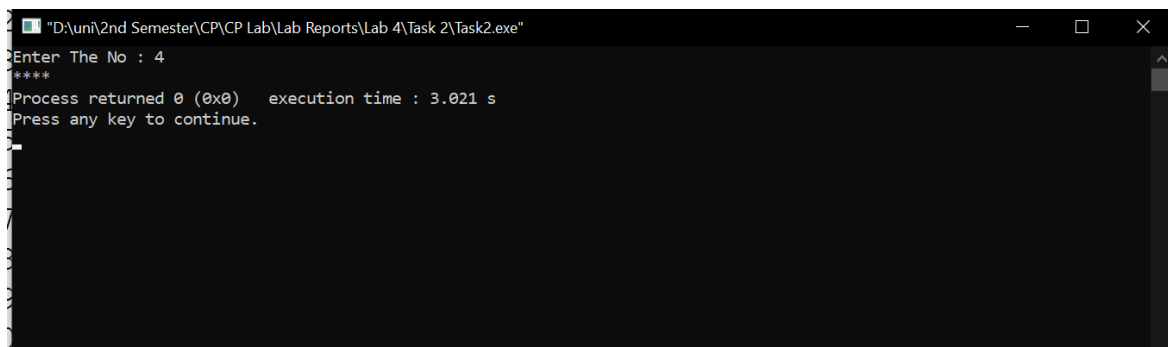
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
Task1.cpp   Task2.cpp
1    #include<iostream>
2    using namespace std;
3
4    main()
5    {
6        int No_1;
7        cout<<"Enter The No : ";
8        cin>>No_1;
9
10       if(No_1 >=1 && No_1 <=10){
11           for(int i = 1; i <= No_1; i++ )
12               cout<<"*";
13       }
14       else
15           return 0;
16   }
17
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

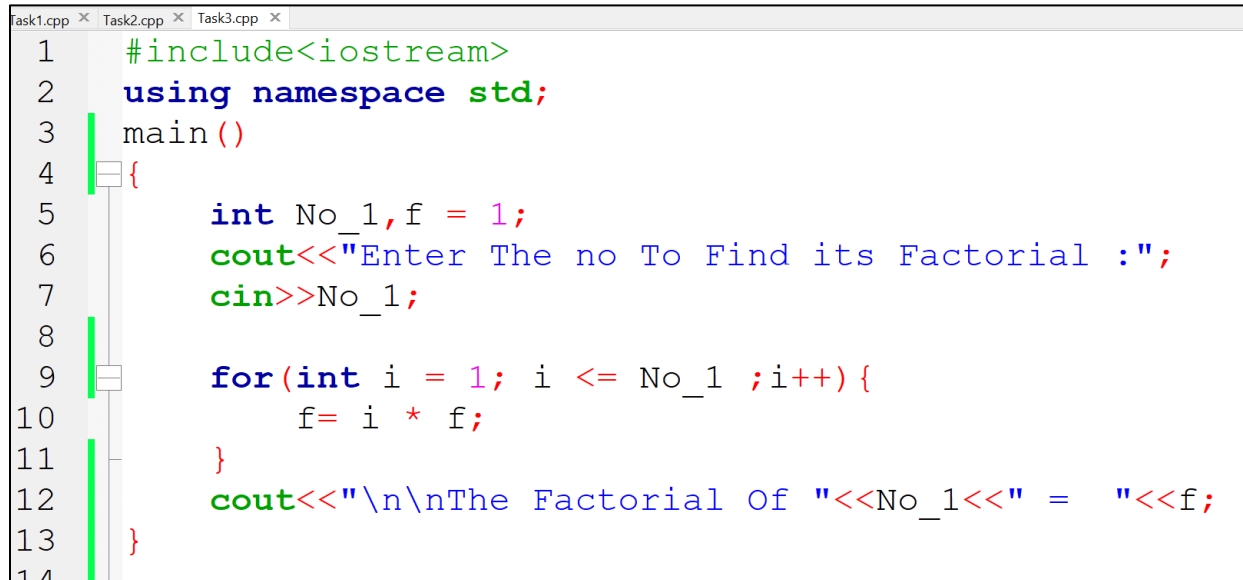Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 2\Task2.exe"
Enter The No : 4
****
Process returned 0 (0x0)   execution time : 3.021 s
Press any key to continue.
```

TASK # 3:

Title:

Write a program to find Factorial of a number.
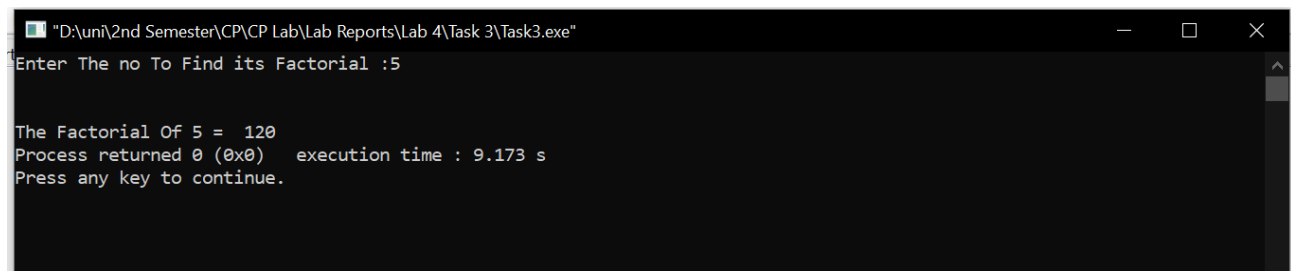
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;
main()
{
    int No_1,f = 1;
    cout<<"Enter The no To Find its Factorial :";
    cin>>No_1;

    for(int i = 1; i <= No_1 ;i++){
        f= i * f;
    }
    cout<<"\n\nThe Factorial Of "<<No_1<<" =  "<<f;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 3\Task3.exe"

Enter The no To Find its Factorial :5


The Factorial Of 5 =  120
Process returned 0 (0x0)    execution time : 9.173 s
Press any key to continue.
```
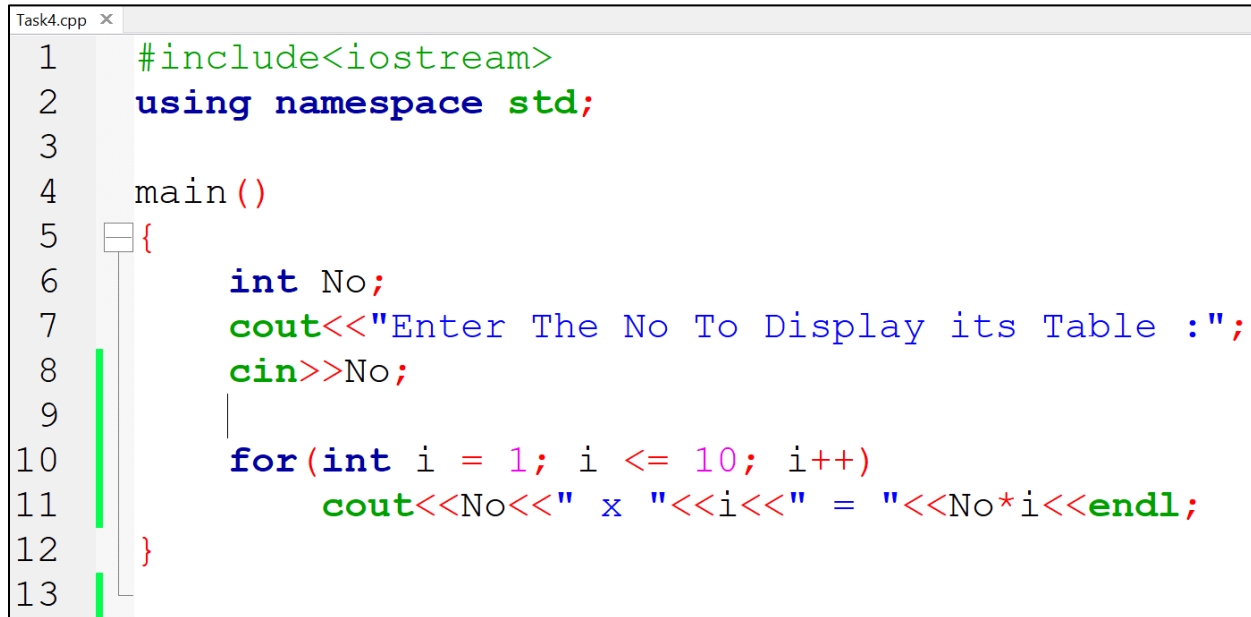
TASK # 4:

Title:

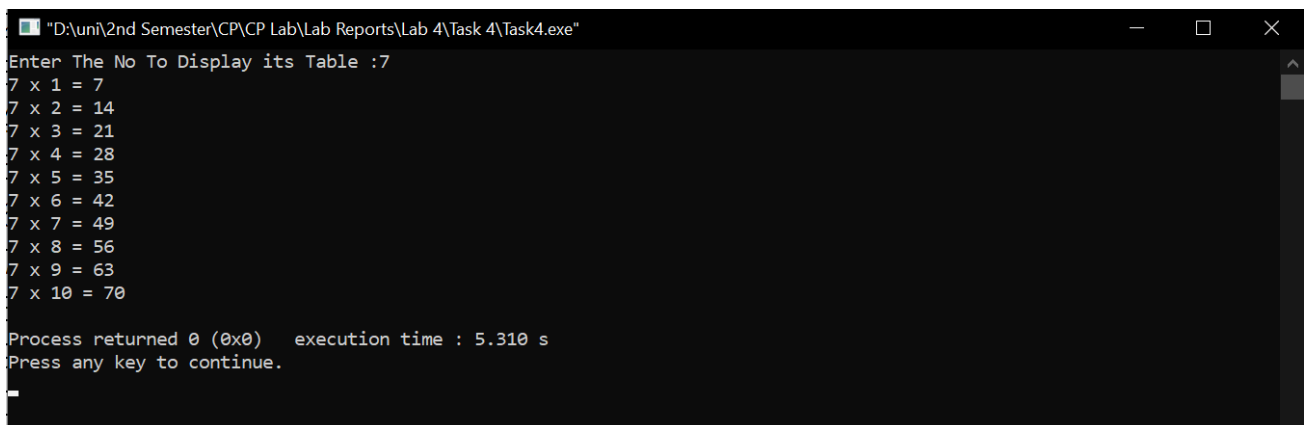Write a program to print multiplication table of any number.

CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main()
{
    int No;
    cout<<"Enter The No To Display its Table :";
    cin>>No;

    for(int i = 1; i <= 10; i++)
        cout<<No<<" x "<<i<<" = "<<No*i<<endl;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 4\Task4.exe"
Enter The No To Display its Table :7
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70

Process returned 0 (0x0)   execution time : 5.310 s
Press any key to continue.
```
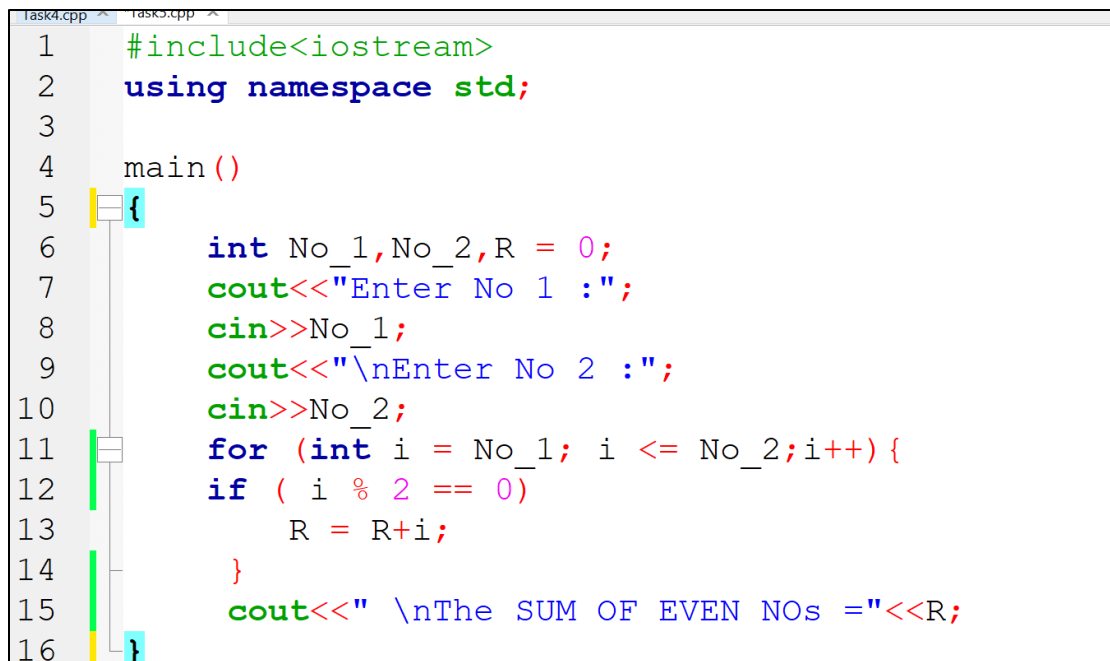
TASK # 5:

Title:

Write a program to input two integer numbers and display the sum of even…….two input numbers.

CODE SCREENSHOTS:
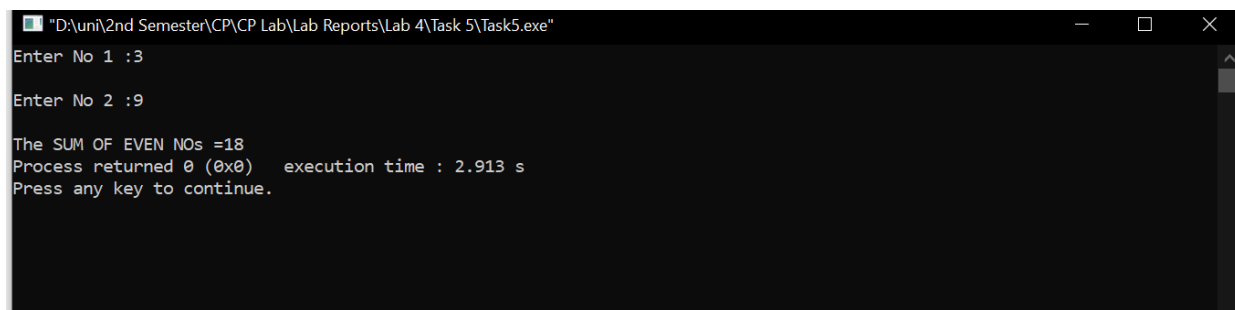
Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main()
{
    int No_1,No_2,R = 0;
    cout<<"Enter No 1 :";
    cin>>No_1;
    cout<<"\nEnter No 2 :";
    cin>>No_2;
    for (int i = No_1; i <= No_2;i++){
    if ( i % 2 == 0)
        R = R+i;
     }
      cout<<" \nThe SUM OF EVEN NOs ="<<R;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

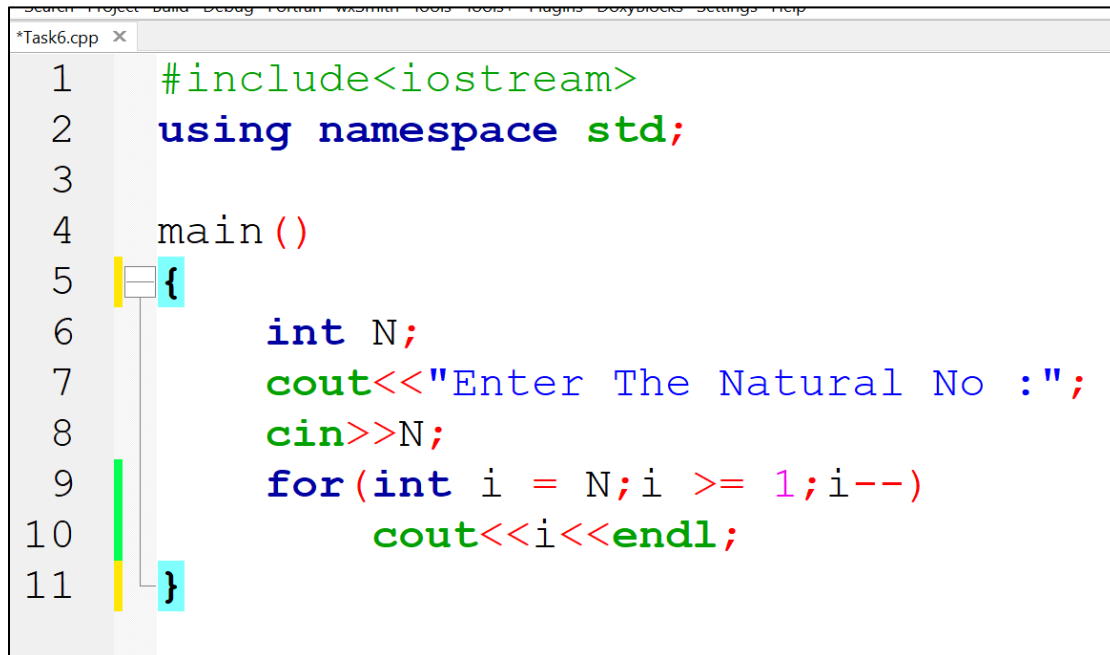Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 5\Task5.exe"
Enter No 1 :3

Enter No 2 :9

The SUM OF EVEN NOs =18
Process returned 0 (0x0)   execution time : 2.913 s
Press any key to continue.
```

TASK # 6:

Title:

Write a program to print all-natural numbers in reverse (from n to 1).

CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main()
{
    int N;
    cout<<"Enter The Natural No :";
    cin>>N;
    for(int i = N;i >= 1;i--)
        cout<<i<<endl;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 6\Task6.exe"
Enter The Natural No :20
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Process returned 0 (0x0)   execution time : 1.583 s
Press any key to continue.
```
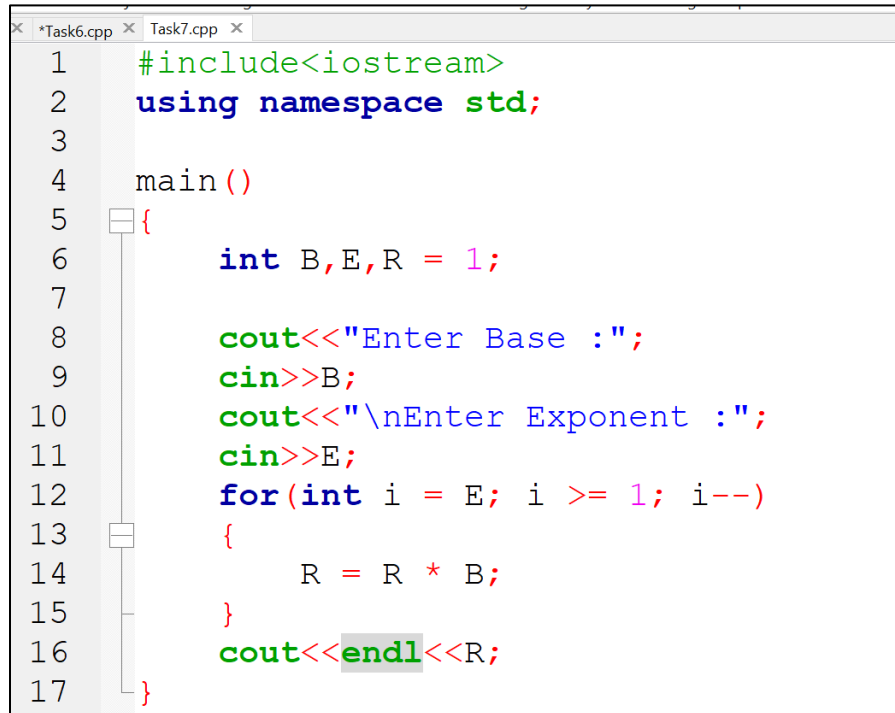
TASK # 7:

Title:

Write a program that takes the base and exponent as input and display the result of power.

CODE SCREENSHOTS:
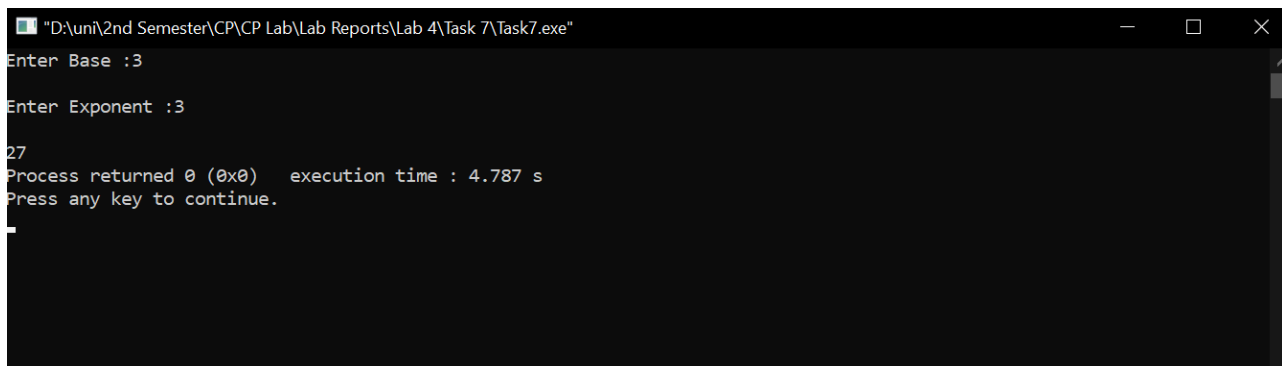
Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main()
{
    int B,E,R = 1;

    cout<<"Enter Base :";
    cin>>B;
    cout<<"\nEnter Exponent :";
    cin>>E;
    for(int i = E; i >= 1; i--)
    {
        R = R * B;
    }
    cout<<endl<<R;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 7\Task7.exe"
Enter Base :3

Enter Exponent :3

27
Process returned 0 (0x0)   execution time : 4.787 s
Press any key to continue.
```

TASK # 8:

Title:

Write a program that prints your name and registration number 10 times...........and registration number.
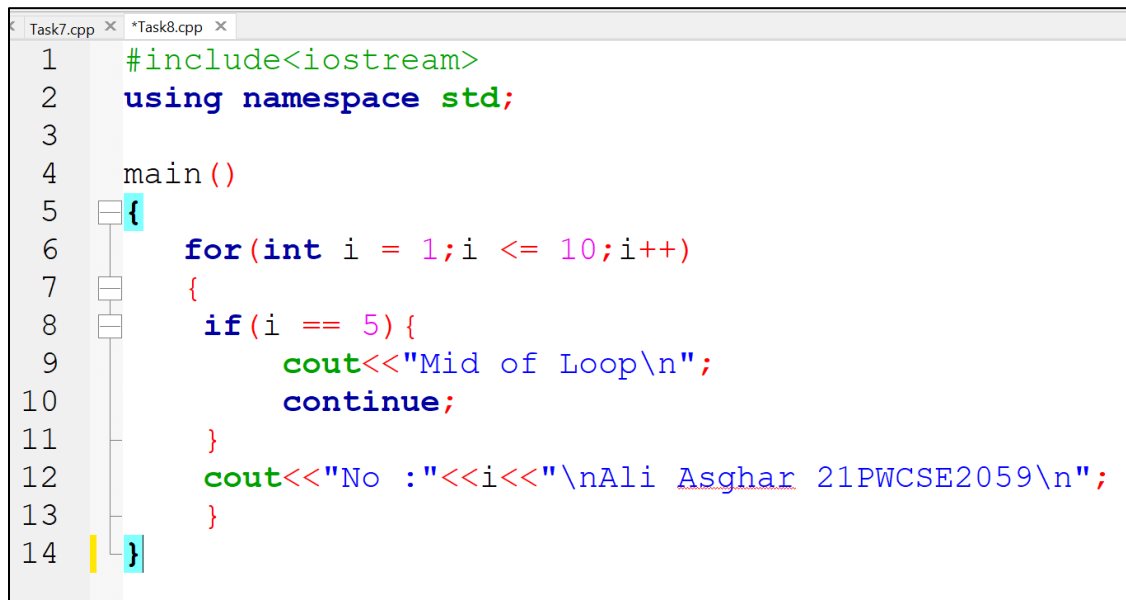
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main()
{
    for(int i = 1;i <= 10;i++)
    {
     if(i == 5){
            cout<<"Mid of Loop\n";
            continue;
        }
        cout<<"No :"<<i<<"\nAli Asghar 21PWCSE2059\n";
        }
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 8\Task8.exe"
No :1
Ali Asghar 21PWCSE2059
No :2
Ali Asghar 21PWCSE2059
No :3
Ali Asghar 21PWCSE2059
No :4
Ali Asghar 21PWCSE2059
Mid of Loop
No :6
Ali Asghar 21PWCSE2059
No :7
Ali Asghar 21PWCSE2059
No :8
Ali Asghar 21PWCSE2059
No :9
Ali Asghar 21PWCSE2059
No :10
Ali Asghar 21PWCSE2059

Process returned 0 (0x0)   execution time : 0.185 s
Press any key to continue.
```
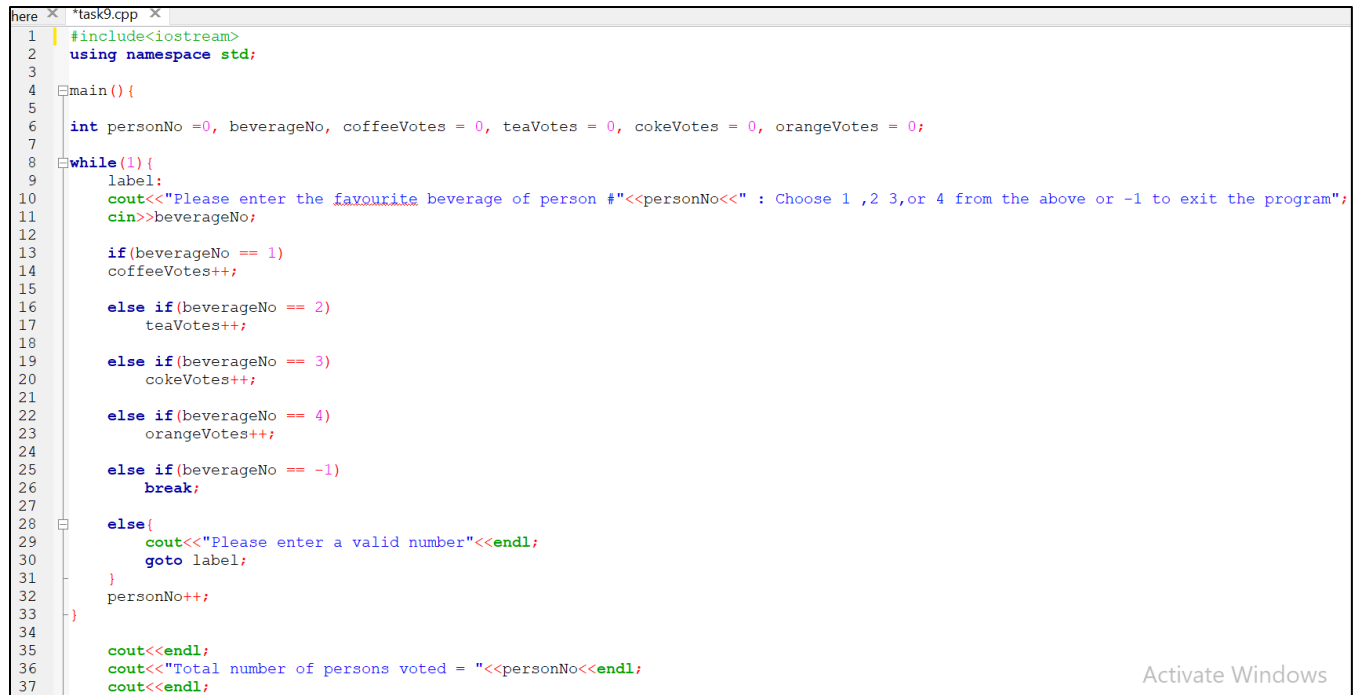
TASK # 9:

Title:

Write a program that performs a survey tally on beverages……..from the following list:

CODE SCREENSHOTS:

Here are the screenshots of the code.

```cpp
here × *task9.cpp ×
1   #include<iostream>
2   using namespace std;
3
4   main(){
5
6   int personNo =0, beverageNo, coffeeVotes = 0, teaVotes = 0, cokeVotes = 0, orangeVotes = 0;
7
8   while(1){
9       label:
10      cout<<"Please enter the favourite beverage of person #"<<personNo<<" : Choose 1 ,2 3,or 4 from the above or -1 to exit the program";
11      cin>>beverageNo;
12
13      if(beverageNo == 1)
14      coffeeVotes++;
15
16      else if(beverageNo == 2)
17          teaVotes++;
18
19      else if(beverageNo == 3)
20          cokeVotes++;
21
22      else if(beverageNo == 4)
23          orangeVotes++;
24
25      else if(beverageNo == -1)
26          break;
27
28      else{
29          cout<<"Please enter a valid number"<<endl;
30          goto label;
31      }
32      personNo++;
33   }
34
35      cout<<endl;
36      cout<<"Total number of persons voted = "<<personNo<<endl;
37      cout<<endl;
```

```
here ×   *task9.cpp ×
11          cin>>beverageNo;
12
13          if(beverageNo == 1)
14          coffeeVotes++;
15
16          else if(beverageNo == 2)
17              teaVotes++;
18
19          else if(beverageNo == 3)
20              cokeVotes++;
21
22          else if(beverageNo == 4)
23              orangeVotes++;
24
25          else if(beverageNo == -1)
26              break;
27
28          else{
29              cout<<"Please enter a valid number"<<endl;
30              goto label;
31          }
32          personNo++;
33      }
34
35          cout<<endl;
36          cout<<"Total number of persons voted = "<<personNo<<endl;
37          cout<<endl;
38
39          cout<<"Beverage    \t"<<"Number of votes"<<endl;
40          cout<<"*******************************"<<endl;
41          cout<<"Coffee      \t"<<coffeeVotes<<endl;
42          cout<<"Tea         \t"<<teaVotes<<endl;
43          cout<<"Coke        \t"<<cokeVotes<<endl;
44          cout<<"Orange Juice\t"<<orangeVotes<<endl;
45
46      }
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 4\Task 9\task9.exe"                    —    □    ×

Please enter the favourite beverage of person #0 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program3
Please enter the favourite beverage of person #1 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program2
Please enter the favourite beverage of person #2 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program4
Please enter the favourite beverage of person #3 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program5
Please enter a valid number
Please enter the favourite beverage of person #3 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program1
Please enter the favourite beverage of person #4 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program2
Please enter the favourite beverage of person #5 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program3
Please enter the favourite beverage of person #6 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program4
Please enter the favourite beverage of person #7 : Choose 1 ,2 3,or 4 from the above or -1 to exit the program-1


Total number of persons voted = 7

Beverage        Number of votes
*****************************
Coffee          1
Tea             2
Coke            2
Orange Juice    2

Process returned 0 (0x0)    execution time : 24.861 s
Press any key to continue.
```