

Lab Task 8

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Q.1. Write a C++ function named The function does not receive any parameter and does not return any value. The function displays the message “Hello World!”; once on the console.

Source Code:

```
#include<iostream>

using namespace std;

void message()

{

    cout<<"Hello World!";

}

int main()

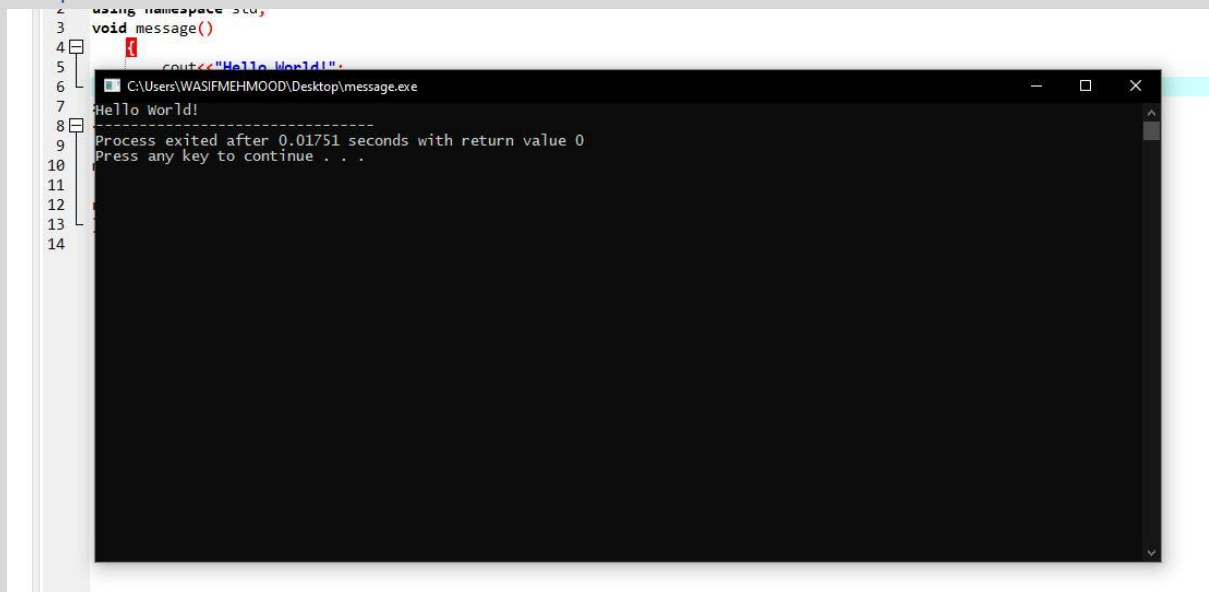
{

    message();

    return 0;

}
```

Output:

The image shows a screenshot of a C++ program being executed. On the left, a portion of the source code is visible, showing the function definition and the main function. The main function calls the message() function. On the right, a console window titled 'C:\Users\WASIFMEHMOOD\Desktop\message.exe' is open. The console output shows 'Hello World!' followed by a separator line '-----'. Below the separator, it says 'Process exited after 0.01751 seconds with return value 0' and 'Press any key to continue . . .'. The console window has a black background and white text.

Q.2. Modify the function of Q 1 so that it receives a number from the user, and displays the message "Hello World!"; the required number of times.

Source Code:

```
#include<iostream>

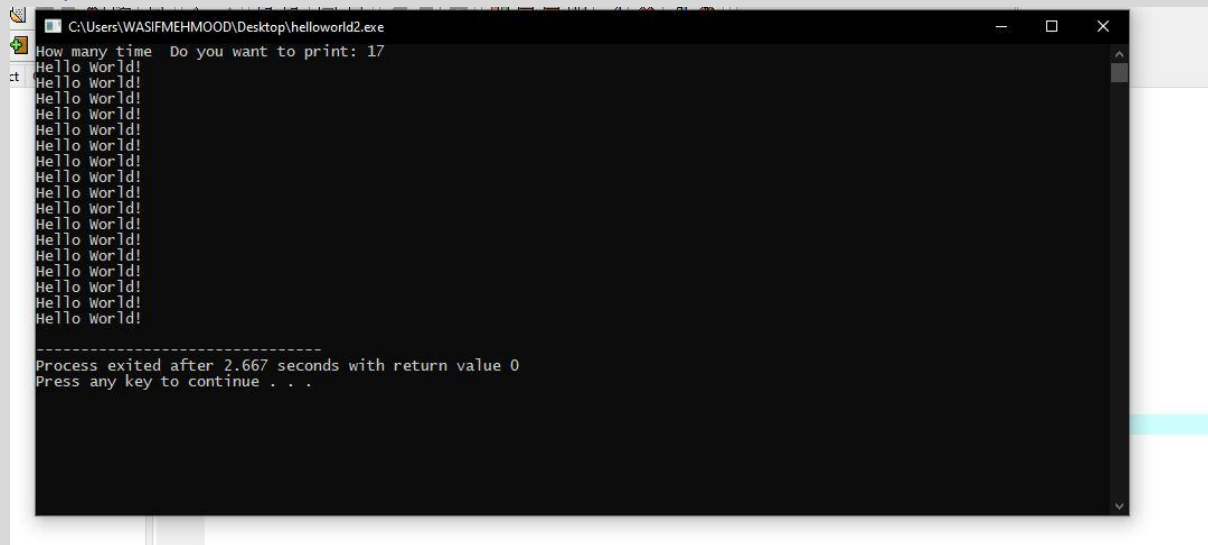
using namespace std;

void message(int a)
{
    for(int i=0;i<a;i++)
        cout<<"Hello World! \n";
}

int main()
{
    int x;
    cout<<"How many time Do you want to print: ";
    cin>>x;
    message(x);

    return 0;
}
```

Output:



Q.3. Write a function which inputs two numbers from the user, and returns the sum of all numbers in the range (inclusive of both numbers). Assume that first number should always be lesser than the second number. Give your function an appropriate name.

A typical output should look like following;

Enter the 1st number : 1

Enter the 2nd number : 4

Sum of all numbers : 10

Source Code:

```
#include<iostream>

using namespace std;

int sum(int a, int b)

{

    int sum=0;

    for(int i=a;i<=b;i++)

    {

        sum+=i;

    }

}
```

```

    }

    cout<<sum;
}

int main()
{
    int x,y;

    cout<<"Enter lower range:";

    cin>>x;

    cout<<"Enter Upper range: ";

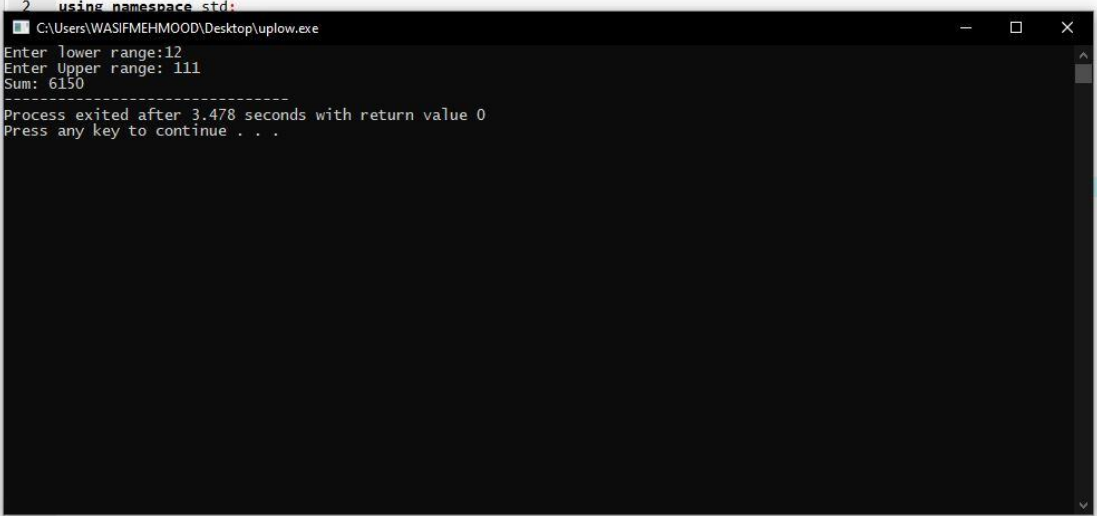
    cin>>y;

    sum(x,y);

return 0;
}

```

Output:



```

2 - using namespace std:
C:\Users\WASIFMEHMOOD\Desktop\uplow.exe
Enter lower range:12
Enter Upper range: 111
Sum: 6150
-----
Process exited after 3.478 seconds with return value 0
Press any key to continue . . .

```

Q.4. Rewrite Q 3, so that the assumption that the first number should always be lesser than the second number is no more required. The program should still display the sum of numbers if

the order is not correct.

Source Code:

```
#include<iostream>

using namespace std;

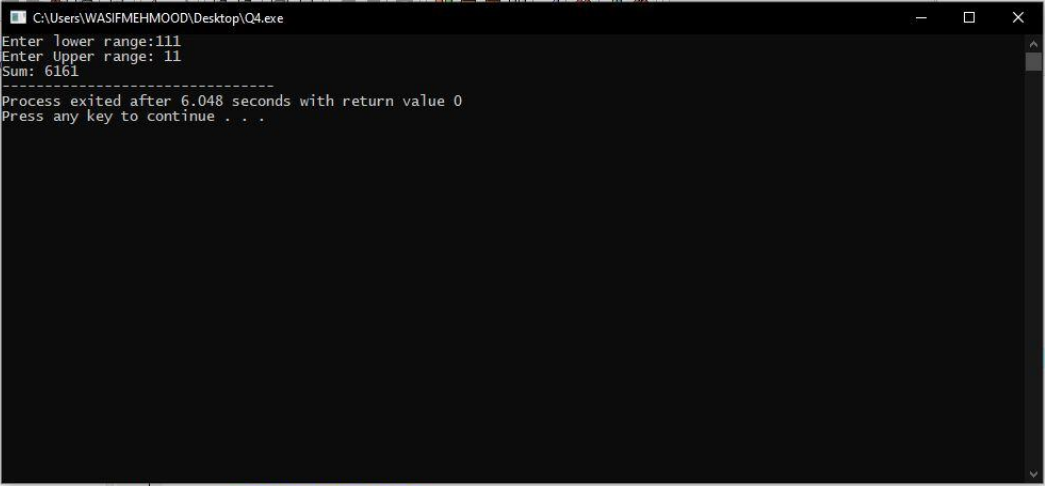
int sum(int a, int b)
{
    int sum=0;
    if(a>b)
    {
        int n1=b;
        int n2=a;
        for(int i=n1;i<=n2;i++)
        {
            sum+=i;
        }
        cout<<"Sum: "<<sum;
    }
}

int main()
{
    int x,y;
    cout<<"Enter lower range:";
    cin>>x;
    cout<<"Enter Upper range: ";
    cin>>y;
    sum(x,y);
}
```

```
return 0;

}
```

Output:



The screenshot shows a Windows command prompt window titled "C:\Users\WASIFMEHMOOD\Desktop\Q4.exe". The user has entered "111" for the lower range and "11" for the upper range. The program has calculated the sum as 6161. The output text is as follows:

```
Enter lower range:111
Enter Upper range: 11
Sum: 6161
-----
Process exited after 6.048 seconds with return value 0
Press any key to continue . . .
```

Below the command prompt, the source code is visible with line numbers 22 through 26:

```
22     cout<<"Enter lower range:";
23     cin>>x;
24     cout<<"Enter Upper range: ";
25     cin>>y;
26     sum(x,y);
```

Q.5. Write a function to find factorial of a given number.

Source Code:

```
#include<iostream>

using namespace std;

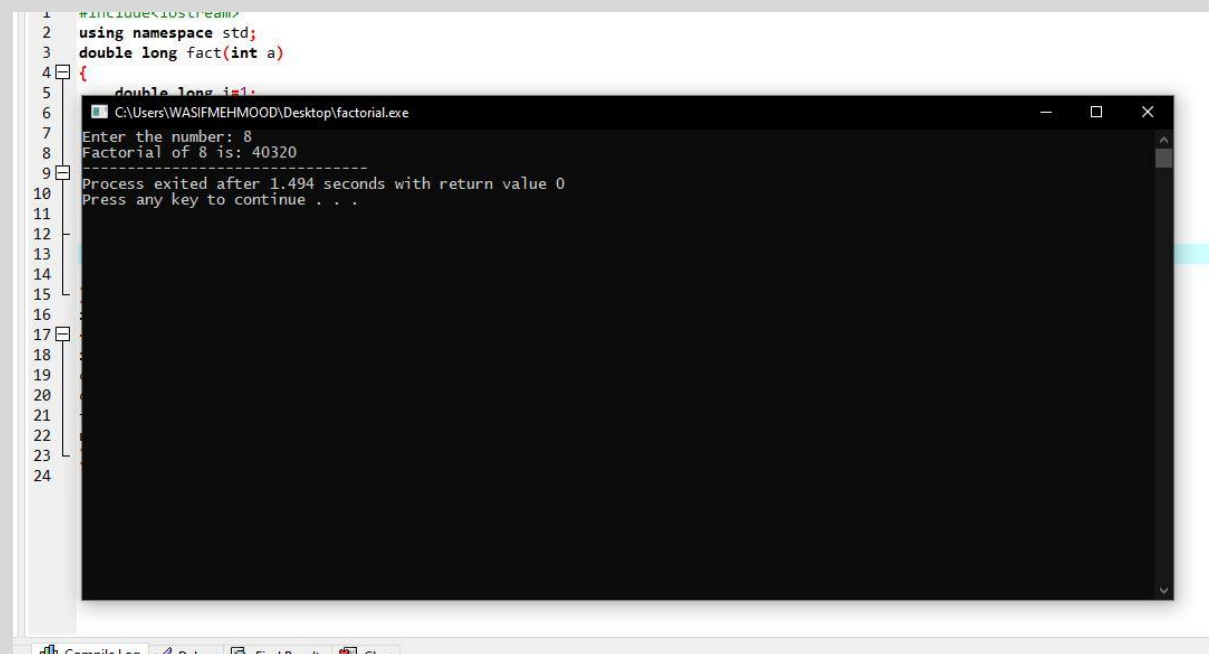
double long fact(int a)
{
    double long i=1;
    double long factorial=1;

    while(i<=a)
    {
        factorial*=i;
        i++;
    }

    cout<<factorial;
```

```
}  
  
int main()  
{  
    int x;  
    cout<<"Enter the number: ";  
    cin>>x;  
    fact(x);  
    return 0;  
}
```

Output:



The screenshot shows a C++ program running in a debugger. The program is located at C:\Users\WASIFMEHMOOD\Desktop\factorial.exe. The code is as follows:

```
1 #include<iostream>  
2 using namespace std;  
3 double long fact(int a)  
4 {  
5     double long i=1;  
6     while(a>1)  
7     {  
8         i=i*a;  
9         a--;  
10    }  
11    return i;  
12 }  
13  
14 int main()  
15 {  
16    int x;  
17    cout<<"Enter the number: ";  
18    cin>>x;  
19    fact(x);  
20    return 0;  
21 }  
22  
23  
24
```

The output of the program is displayed in the console window:

```
Enter the number: 8  
Factorial of 8 is: 40320  
-----  
Process exited after 1.494 seconds with return value 0  
Press any key to continue . . .
```