



**NATIONAL UNIVERSITY OF SCIENCES AND
TECHNOLOGY**

PROGRAMMING FUNDAMENTALS

LAB MODULE # 5

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|-------------------------|--------------------------------|
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| <u>CLASS:</u> | <u>ME-15</u> |
| <u>COURSE:</u> | <u>CS-114</u> |
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Q1:

```
#include <iostream>
using namespace std;
int main() {
    int x=1;
    do {
        cout<<"Enter a number: ";
        cin>>x;
    } while (x>0);
    return 0;
}
```

Q 1 (results):

```
6      cout<<"Enter a number: ";
7      cin>>x;
8  } while (x>0);
9      return 0;
main
main.cpp x
C:\papers\main.exe
Enter a number:5
Enter a number:-2

Process finished with exit code 0
```

Q2:

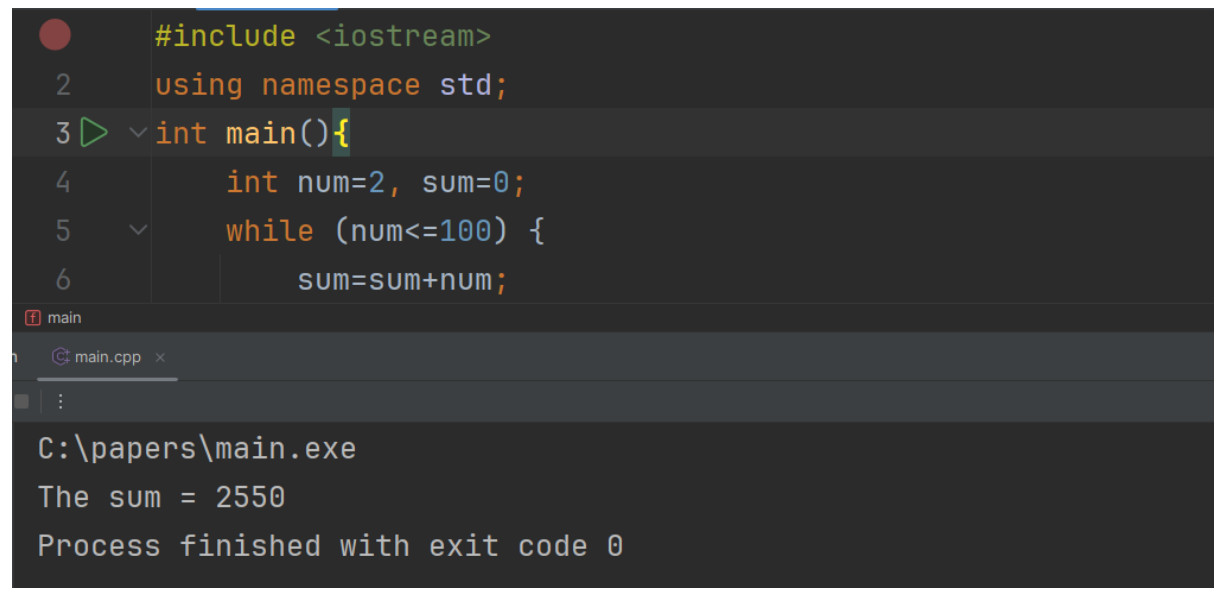
```
#include <iostream>
using namespace std;
int main() {
    double num1, num2, repeat;
    char opp;
    do {
        cout << "Enter 2 numbers: ";
        cin >> num1;
        cin >> num2;
        cout << "Enter the operation
you want to perform: ";
        cin >> opp;
        switch (opp) {
            case '+':
                cout << "Sum= " << num1
+ num2;
                break;
            case '*':
                cout <<
"Multiplication= " << num1 * num2;
                break;
            case '-':
                cout << "Difference= "
<< num1 - num2;
                break;
            case '/':
                cout << "Division= " <<
num1 / num2;
                break;
            case '%':
```

```
        cout << "Remainder= "
<< (num1, num2);
        break;
    case '^':
        cout << "Power= " <<
(num1, num2);
        break;
    default:
        cout << "Wrong key
pressed";
        break;
        cout<<"If you want to
repeat the process press 1 else press
0";
        cin>>repeat;
    }
} while( repeat==1);
return 0;
}
```

Q 3 (a):

```
#include <iostream>
using namespace std;
int main() {
    int num=2, sum=0;
    while (num<=100) {
        sum=sum+num;
        num=num+2;
    }
    cout<<"The sum = "<<sum;
    return 0;
}
```

Q 3 (a: results):



The screenshot shows a C++ IDE with a dark theme. The top pane displays the source code for a program that calculates the sum of integers from 2 to 100. The code is as follows:

```
1 #include <iostream>
2 using namespace std;
3 int main(){
4     int num=2, sum=0;
5     while (num<=100) {
6         sum=sum+num;
```

The bottom pane shows the execution output for the program:

```
C:\papers\main.exe
The sum = 2550
Process finished with exit code 0
```

The IDE interface includes a file explorer on the left showing 'main.cpp' and a console window at the bottom displaying the program's output and exit status.

Q 3 (b):

```
#include <iostream>
using namespace std;
int main() {
    int num=1, sum=0;
    while (num<=100) {
        sum=sum+(num*num);
        num=num+1;
    }
    cout<<"The sum = "<<sum;
    return 0;
}
```


Q 3 (b: results):

```
1  #include <iostream>
2  using namespace std;
3  int main(){
4      int num=1, sum=0;
5      while (num<=100){
6          sum=sum+(num*num);
```

main.cpp x

:

C:\papers\main.exe

The sum = 338350

Process finished with exit code 0

Q 4 (a):

```
#include <iostream>
using namespace std;
int main() {
    int num=1, product=2;
    cout<<"1\n";
    while (num<=20) {
        product=product*2;
        num=num+1;
        cout<<product<<endl;
    }
    return 0;
}
```

Q 4 (a: result):

```
1  #include <iostream>
2  using namespace std;
3  int main(){
4      int num=1, product=2;
5      cout<<"1\n";
6      while (num<=20){
```

main

main.cpp x

:

32768
65536
131072
262144
524288
1048576
2097152

Q 4 (b):

```
#include <iostream>
using namespace std;
int main() {
    int num1, num2, i, sum=0;
    cout<<"Enter start number and end
number: ";
    cin>>num1>>num2;
    i=num1;
    while (i<=num2) {
        if (i%2!=0) {
            sum=sum+i;
        }
        i=i+1;
    }
    cout<<"The sum = "<<sum;
    return 0;
}
```

Q 4 (b: results):

```
1  #include <iostream>
2  using namespace std;
3  int main(){
4      int num1, num2, i, sum=0;
5      cout<<"Enter start number and end number: ";
6      cin>>num1>>num2;
```

main.cpp x

:

C:\papers\main.exe

Enter start number and end number: 1

10

The sum = 25

Process finished with exit code 0