1.Operations:

```
#include <iostream>
using namespace std;
int main() {
   int a, b;
   cout << "Enter two integers: ";
   cin >> a >> b;
   cout << "Addition: " << a + b << endl;
   cout << "Subtraction: " << a - b << endl;
   cout << "Multiplication: " << a * b << endl;
   cout << "Division: " << a / b << endl;
   cout << "Modulo: " << a % b << endl;
   return 0;
}
```

Output:

```
#include <iostream>
using namespace std;
int main() {
    int num1, num2;
    cout << "Enter two integers: ";
    cin >> num1 >> num2;
    cout << "Addition: " << (num1 + num2) << endl;
    cout << "Subtraction: " << (num1 - num2) << endl;
    cout << "Multiplication: " << (num1 * num2) << endl;
    cout << "Division: " << (num1 / num2) << endl;
    cout << "Modulo: " << (num1 % num2) << endl;
    return 0;
}
```

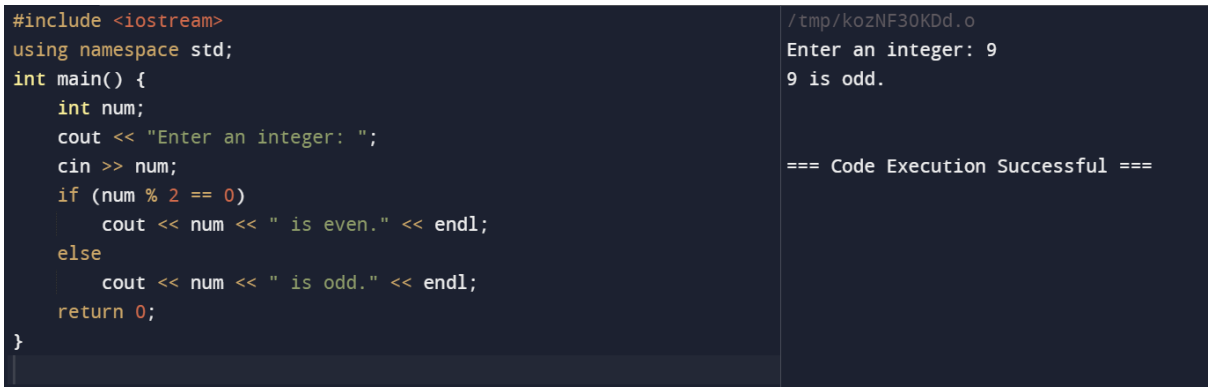
```
/tmp/jm7ocr0b8I.o
Enter two integers: 9
8
Addition: 17
Subtraction: 1
Multiplication: 72
Division: 1
Modulo: 1


=== Code Execution Successful ===
```

2. Program to determine if an integer is odd or even:

```
#include <iostream>
using namespace std;
int main() {
   int num;
```

```
    cout << "Enter an integer: ";
    cin >> num;
    if (num % 2 == 0)
        cout << num << " is even." << endl;
    else
        cout << num << " is odd." << endl;
    return 0;
}
```

Output:



```
#include <iostream>
using namespace std;
int main() {
    int num;
    cout << "Enter an integer: ";
    cin >> num;
    if (num % 2 == 0)
        cout << num << " is even." << endl;
    else
        cout << num << " is odd." << endl;
    return 0;
}
```

```
/tmp/kozNF3OKDd.o
Enter an integer: 9
9 is odd.


=== Code Execution Successful ===
```

3. Program to compute the average of three integers:

```
#include <iostream>
using namespace std;
int main() {
    int a, b, c;
    cout << "Enter three integers: ";
    cin >> a >> b >> c;
    double average = (a + b + c) / 3.0;
    cout << "Average: " << average << endl;
    return 0;
}
```

Output:

```
#include <iostream>
using namespace std;
int main() {
    int a, b, c;
    cout << "Enter three integers: ";
    cin >> a >> b >> c;
    double average = (a + b + c) / 3.0;
    cout << "Average: " << average << endl;
    return 0;
}
```

```
/tmp/BQNPnUrIjE.o
Enter three integers: 97

5
6
Average: 6.66667


=== Code Execution Successful ===
```

4. Program to check if two numbers are equal:

```
#include <iostream>
using namespace std;
int main() {
    int a, b;
    cout << "Enter two integers: ";
    cin >> a >> b;
    if (a == b)
        cout << "The numbers are equal." << endl;
    else
        cout << "The numbers are not equal." << endl;
    return 0;
}
```

Output:

```
#include <iostream>
using namespace std;
int main() {
    int a, b;
    cout << "Enter two integers: ";
    cin >> a >> b;
    if (a == b)
        cout << "The numbers are equal." << endl;
    else
        cout << "The numbers are not equal." << endl;
    return 0;
}
```

```
/tmp/eZ4VS3PPh8.o
Enter two integers: 6
4
The numbers are not equal.


=== Code Execution Successful ===
```

5. Program to perform operations on two floating-point numbers:

```
#include <iostream>
using namespace std;
int main() {
   float x, y;
   cout << "Enter two floating-point numbers: ";
   cin >> x >> y;
   cout << "Addition: " << x + y << endl;
   cout << "Subtraction: " << x - y << endl;
   cout << "Multiplication: " << x * y << endl;
   cout << "Division: " << x / y << endl;
   return 0;
}
```

Output

```
#include <iostream>
using namespace std;
int main() {
    float x, y;
    cout << "Enter two floating-point numbers: ";
    cin >> x >> y;
    cout << "Addition: " << x + y << endl;
    cout << "Subtraction: " << x - y << endl;
    cout << "Multiplication: " << x * y << endl;
    cout << "Division: " << x / y << endl;
    return 0;
}
```

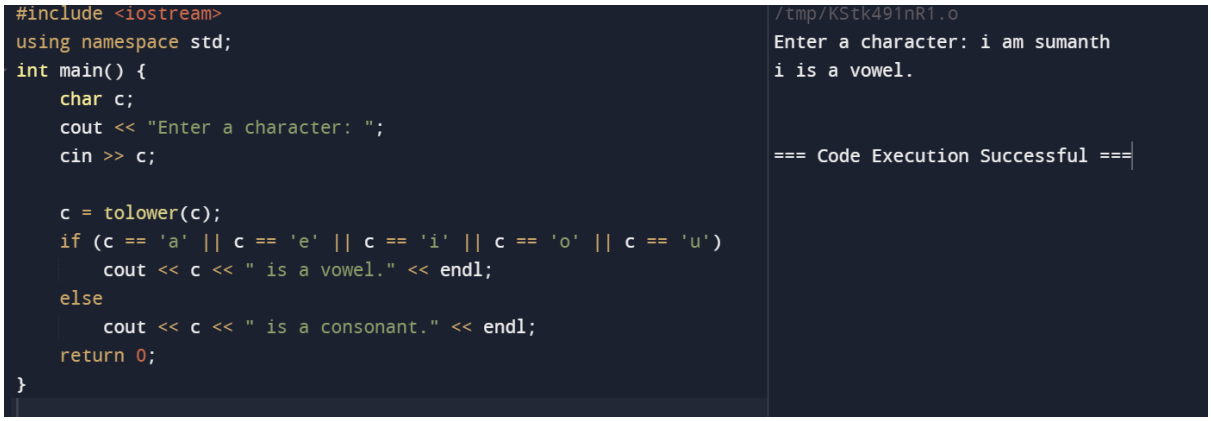
```
/tmp/yBiMTWLp9M.o
Enter two floating-point numbers: 2
4
Addition: 6
Subtraction: -2
Multiplication: 8
Division: 0.5


=== Code Execution Successful ===
```

6. Program to check if a character is a vowel or consonant:

```
#include <iostream>
using namespace std;
int main() {
   char c;
   cout << "Enter a character: ";
   cin >> c;
```

```
    c = tolower(c);
    if (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u')
        cout << c << " is a vowel." << endl;
    else
        cout << c << " is a consonant." << endl;
    return 0;
}
```

Output:

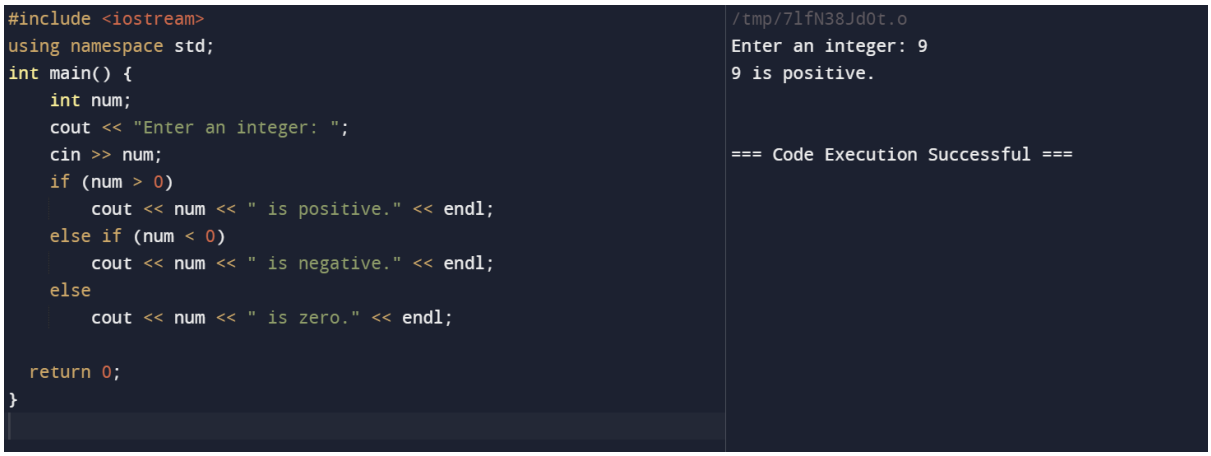


7. Program to check if a number is positive, negative, or zero:

```
#include <iostream>
using namespace std;
int main() {
    int num;
    cout << "Enter an integer: ";
    cin >> num;
    if (num > 0)
        cout << num << " is positive." << endl;
    else if (num < 0)
        cout << num << " is negative." << endl;
    else
        cout << num << " is zero." << endl;
```

```
  return 0;
}
```

Output



```
#include <iostream>
using namespace std;
int main() {
    int num;
    cout << "Enter an integer: ";
    cin >> num;
    if (num > 0)
        cout << num << " is positive." << endl;
    else if (num < 0)
        cout << num << " is negative." << endl;
    else
        cout << num << " is zero." << endl;

  return 0;
}
```

```
/tmp/7lfN38Jd0t.o
Enter an integer: 9
9 is positive.


=== Code Execution Successful ===
```

8. Program to determine which number is greater among two integers:

```
#include <iostream>
using namespace std;
int main() {
    int a, b;
    cout << "Enter two integers: ";
    cin >> a >> b;
    if (a > b)
        cout << a << " is greater." << endl;
    else if (b > a)
        cout << b << " is greater." << endl;
    else
        cout << "Both numbers are equal." << endl;
    return 0;
}
```

Output

```
#include <iostream>
using namespace std;
int main() {
    int a, b;
    cout << "Enter two integers: ";
    cin >> a >> b;
    if (a > b)
        cout << a << " is greater." << endl;
    else if (b > a)
        cout << b << " is greater." << endl;
    else
        cout << "Both numbers are equal." << endl;
    return 0;
}
```

```
/tmp/ezZEyK9p93.o
Enter two integers: 8
7
8 is greater.


=== Code Execution Successful ===
```

9. Program to round a floating-point number to the nearest integer using floor and ceil:

```
#include <iostream>
#include <cmath>
using namespace std;
int main() {
    float num;
    cout << "Enter a floating-point number: ";
    cin >> num;
    cout << "Floor value: " << floor(num) << endl;
    cout << "Ceil value: " << ceil(num) << endl;
    return 0;
}
```

Output

```
#include <iostream>
#include <cmath>
using namespace std;
int main() {
    float num;
    cout << "Enter a floating-point number: ";
    cin >> num;
    cout << "Floor value: " << floor(num) << endl;
    cout << "Ceil value: " << ceil(num) << endl;
    return 0;
}
```

```
/tmp/w6ZJPUVIxI.o
Enter a floating-point number: 9
Floor value: 9
Ceil value: 9


=== Code Execution Successful ===
```

10. Program to swap two numbers:

```
#include <iostream>
using namespace std;
int main() {
   int a, b, temp;
   cout << "Enter two integers: ";
   cin >> a >> b;
   temp = a;
   a = b;
   b = temp;
   cout << "After swapping: a = " << a << ", b = " << b << endl;
   return 0;
}
```

Output:

```
#include <iostream>
using namespace std;
int main() {
    int a, b, temp;
    cout << "Enter two integers: ";
    cin >> a >> b;
    temp = a;
    a = b;
    b = temp;
    cout << "After swapping: a = " << a << ", b = " << b << endl;
    return 0;
}
```

```
/tmp/2hNBfgfTCI.o
Enter two integers: 98

90
After swapping: a = 90, b = 9


=== Code Execution Successful ===
```