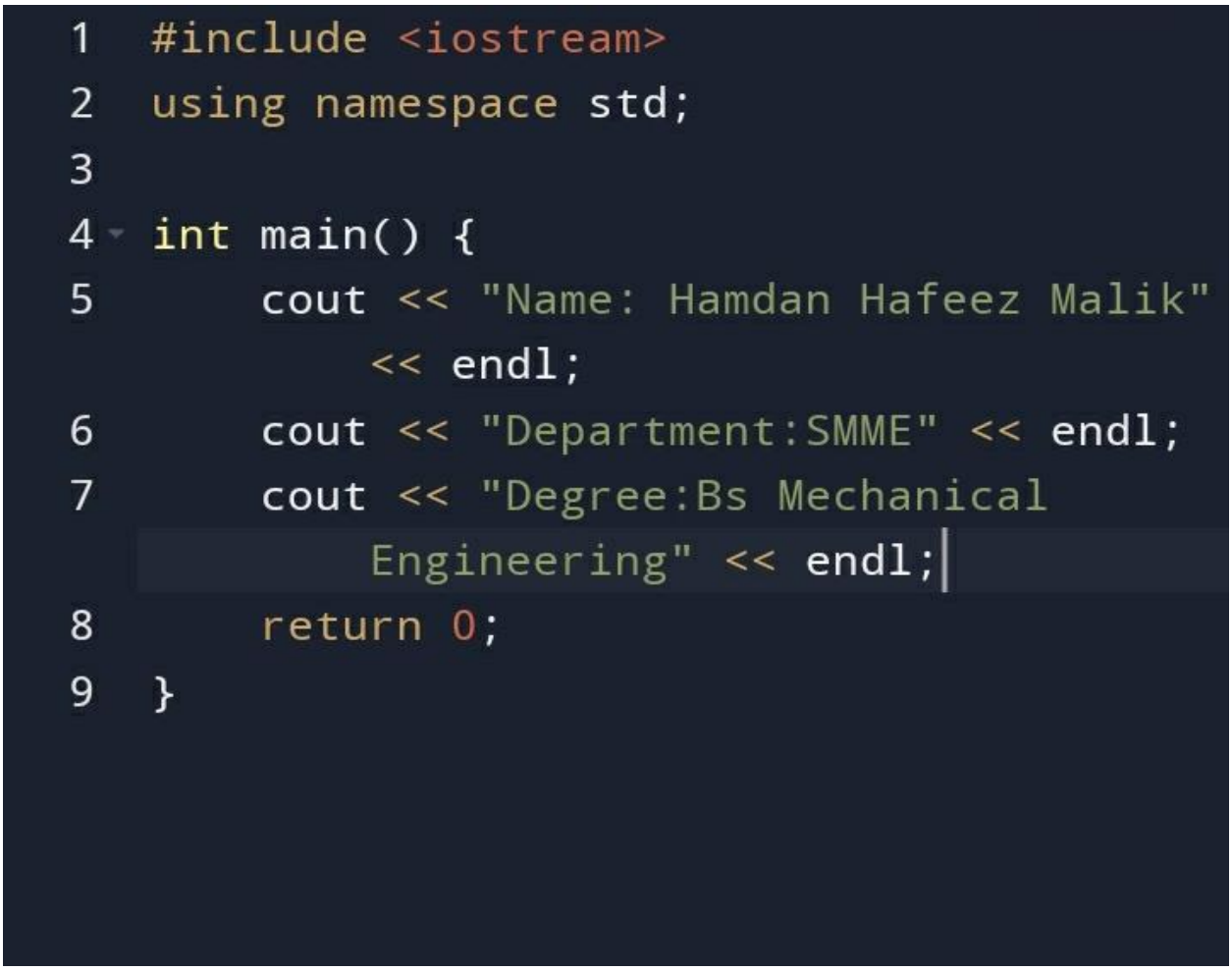
Name : Hamdan Hafeez Malik

Roll no : 480469

LAB MANUAL : 1

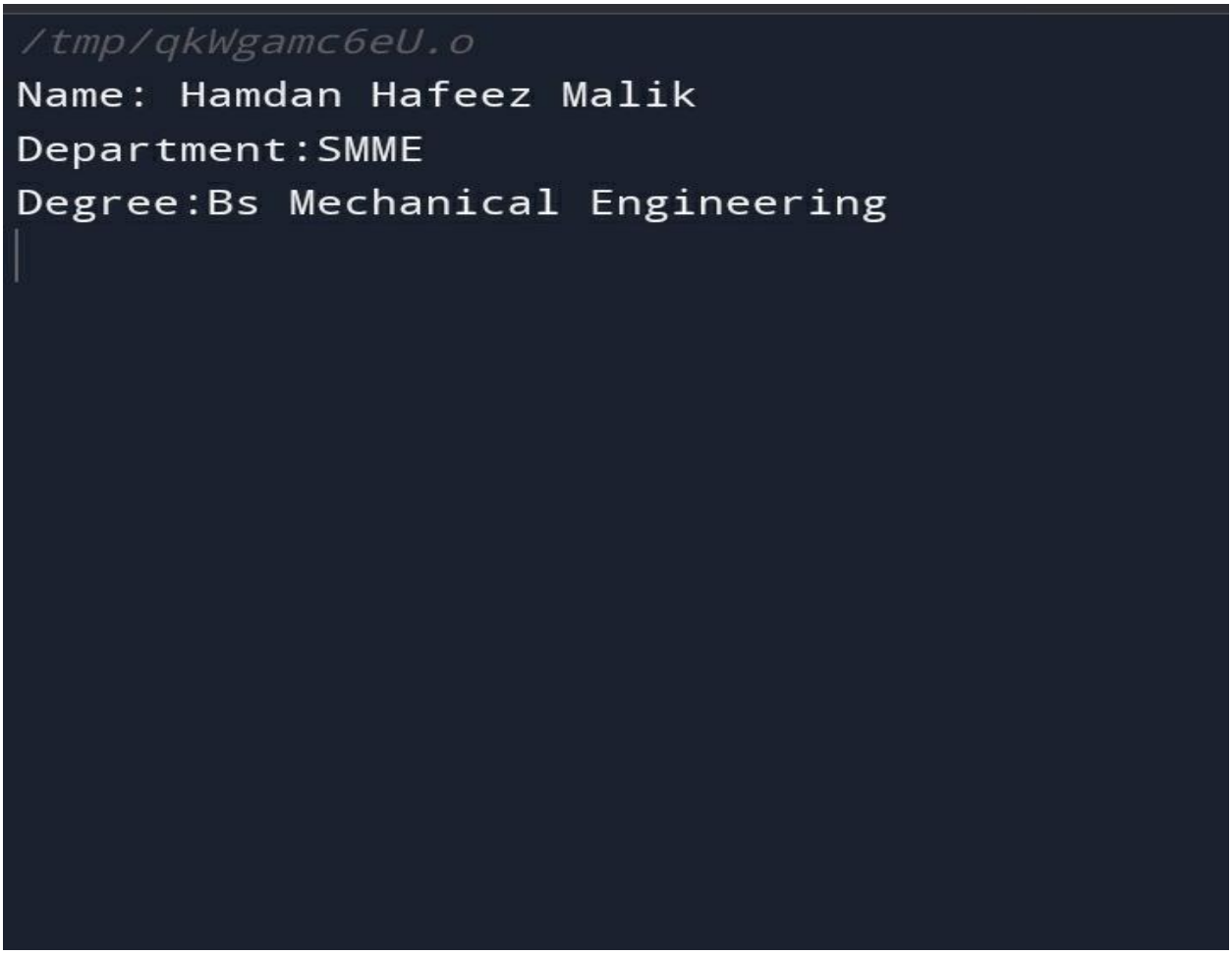
Lab Task:

1. Write a C++ code that displays your name, department and degree on the console. Make sure the three Things are in three different lines.

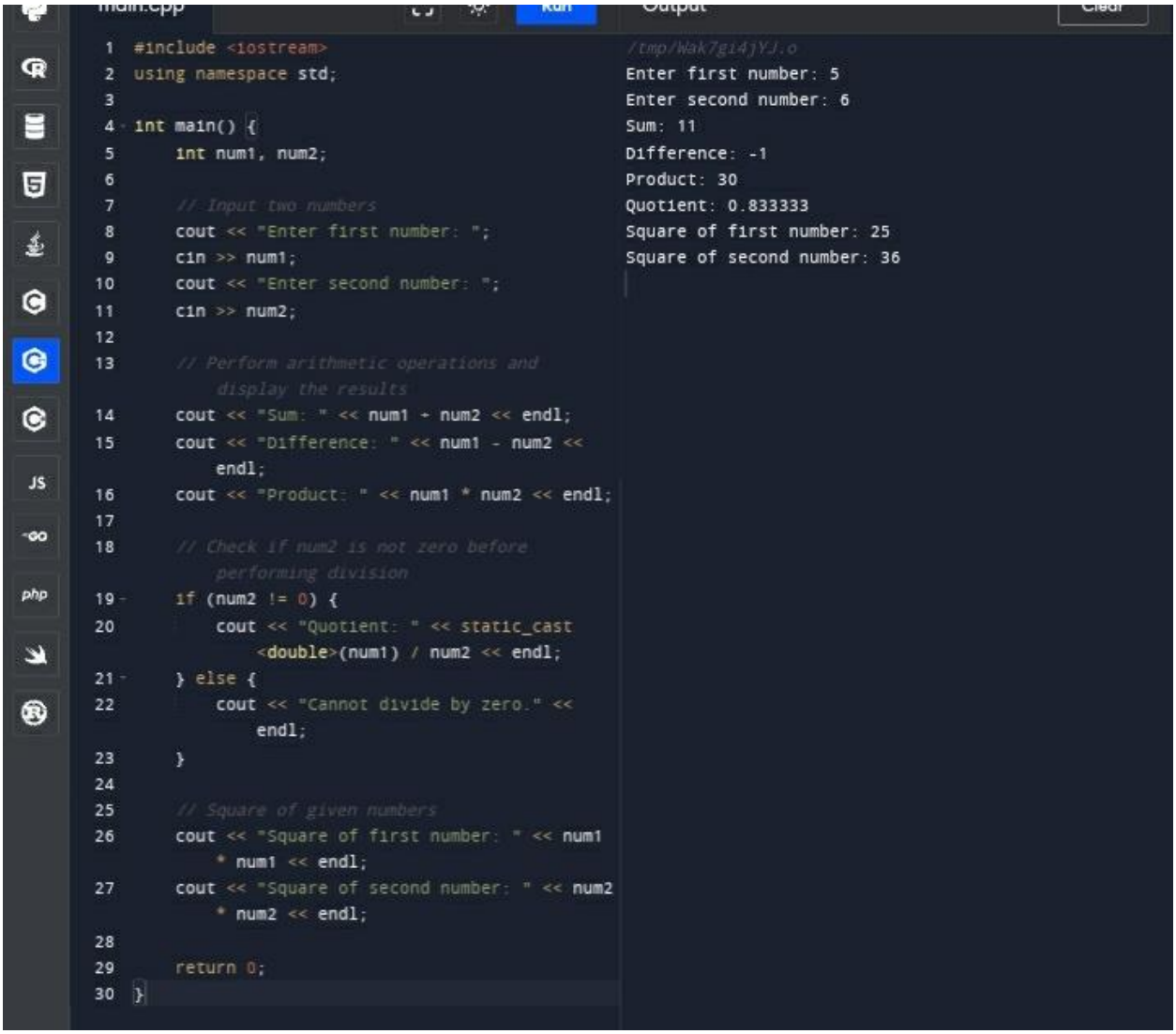


```cpp
#include <iostream>
using namespace std;

int main() {
    cout << "Name: Hamdan Hafeez Malik"
         << endl;
    cout << "Department:SMME" << endl;
    cout << "Degree:Bs Mechanical
        Engineering" << endl;
    return 0;
}
```

Output:


/tmp/qkWgamc6eU.o
Name: Hamdan Hafeez Malik
Department:SMME
Degree:Bs Mechanical Engineering

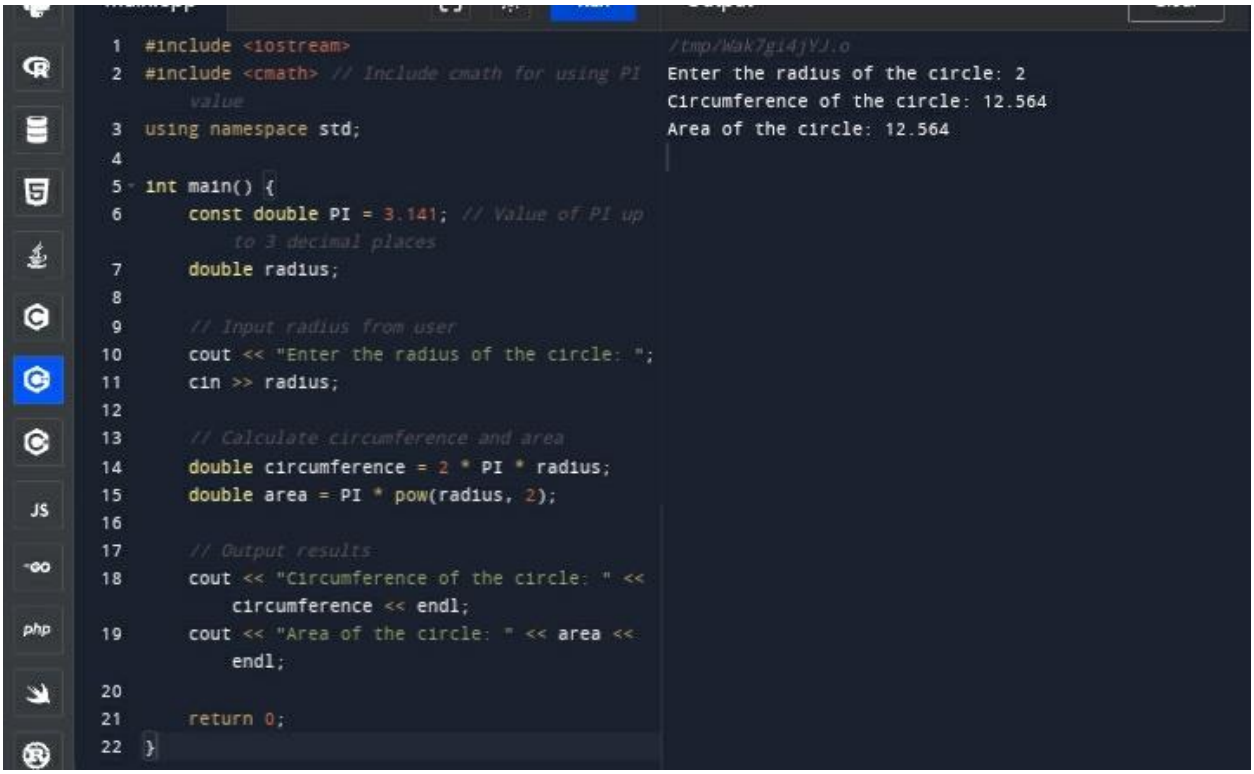
Q2



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

int main() {
    int num1, num2;

    // Input two numbers
    cout << "Enter first number: ";
    cin >> num1;
    cout << "Enter second number: ";
    cin >> num2;

    // Perform arithmetic operations and
       display the results
    cout << "Sum: " << num1 + num2 << endl;
    cout << "Difference: " << num1 - num2 <<
       endl;
    cout << "Product: " << num1 * num2 << endl;

    // Check if num2 is not zero before
       performing division
    if (num2 != 0) {
        cout << "Quotient: " << static_cast
           <double>(num1) / num2 << endl;
    } else {
        cout << "Cannot divide by zero." <<
           endl;
    }

    // Square of given numbers
    cout << "Square of first number: " << num1
       * num1 << endl;
    cout << "Square of second number: " << num2
       * num2 << endl;

    return 0;
}
```

```
/tmp/Wak7gi4jYJ.o
Enter first number: 5
Enter second number: 6
Sum: 11
Difference: -1
Product: 30
Quotient: 0.833333
Square of first number: 25
Square of second number: 36
```

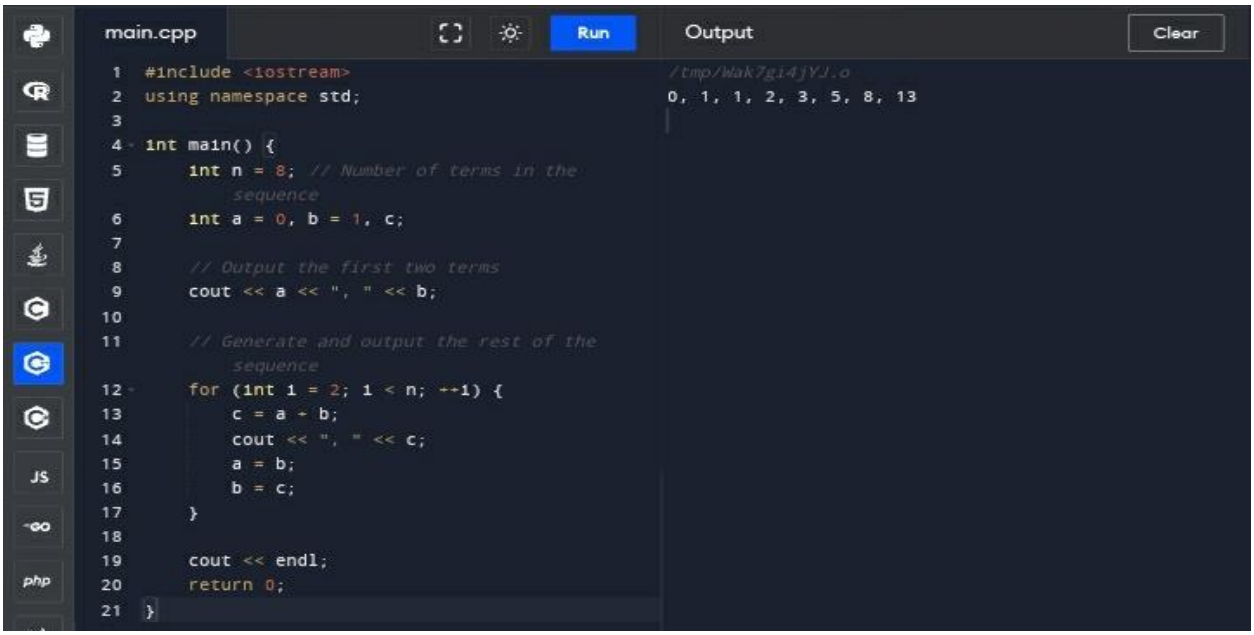
Q3



```cpp
#include <iostream>
#include <cmath> // Include cmath for using PI value
using namespace std;

int main() {
    const double PI = 3.141; // Value of PI up to 3 decimal places
    double radius;

    // Input radius from user
    cout << "Enter the radius of the circle: ";
    cin >> radius;

    // Calculate circumference and area
    double circumference = 2 * PI * radius;
    double area = PI * pow(radius, 2);

    // Output results
    cout << "Circumference of the circle: " << circumference << endl;
    cout << "Area of the circle: " << area << endl;

    return 0;
}
```

```
/tmp/Wak7gi4jYJ.o
Enter the radius of the circle: 2
Circumference of the circle: 12.564
Area of the circle: 12.564
```

Q4

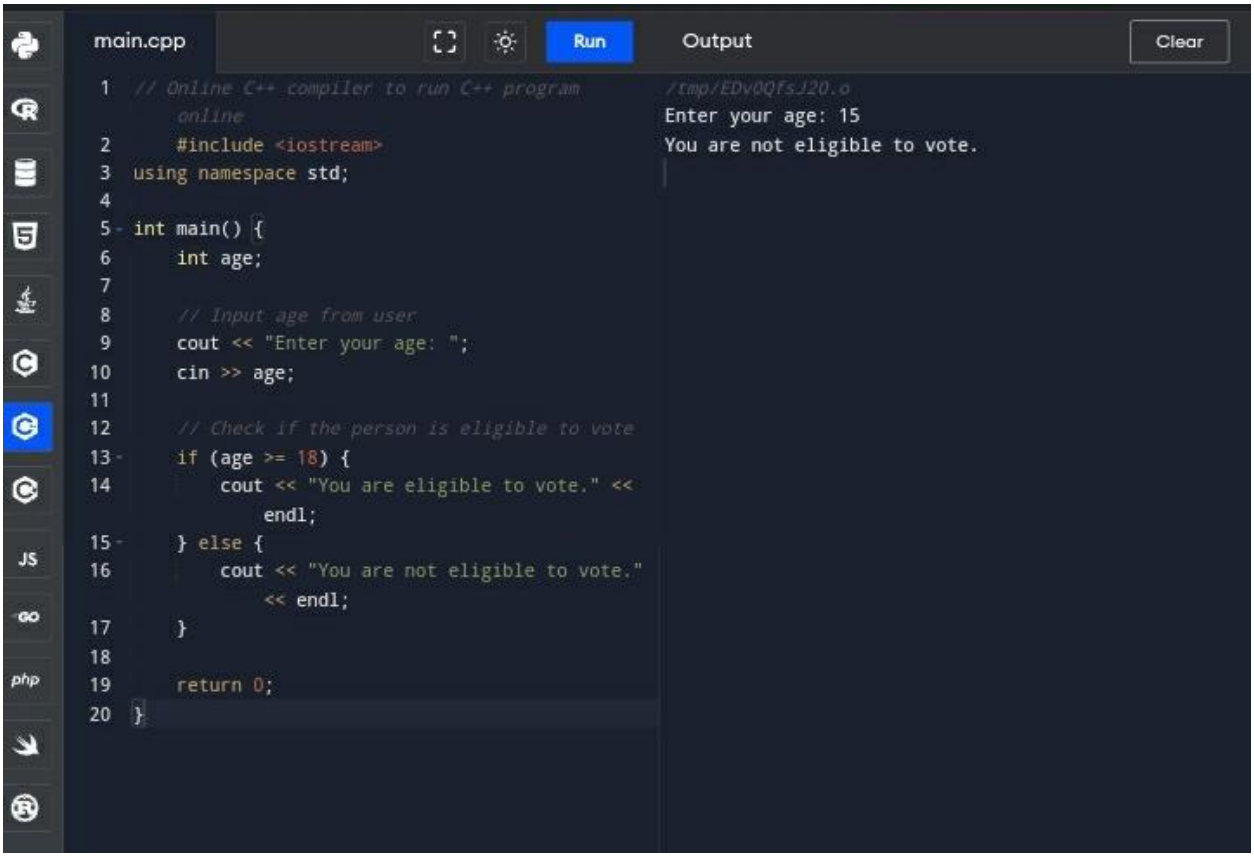



```cpp
#include <iostream>
using namespace std;

int main() {
    int n = 8; // Number of terms in the sequence
    int a = 0, b = 1, c;

    // Output the first two terms
    cout << a << ", " << b;

    // Generate and output the rest of the sequence
    for (int i = 2; i < n; ++i) {
        c = a + b;
        cout << ", " << c;
        a = b;
        b = c;
    }

    cout << endl;
    return 0;
}
```

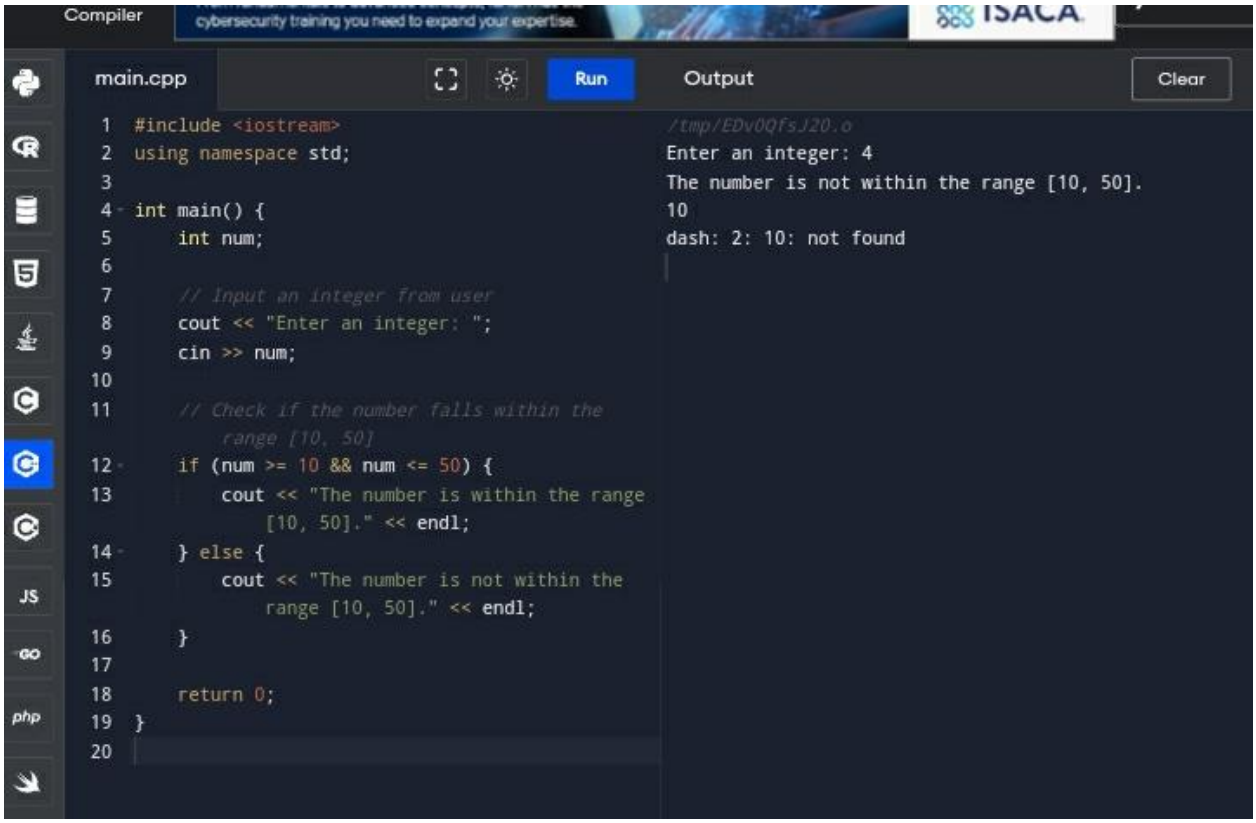
```
/tmp/Wak7gi4jYJ.o
0, 1, 1, 2, 3, 5, 8, 13
```

Lab 2 lab task

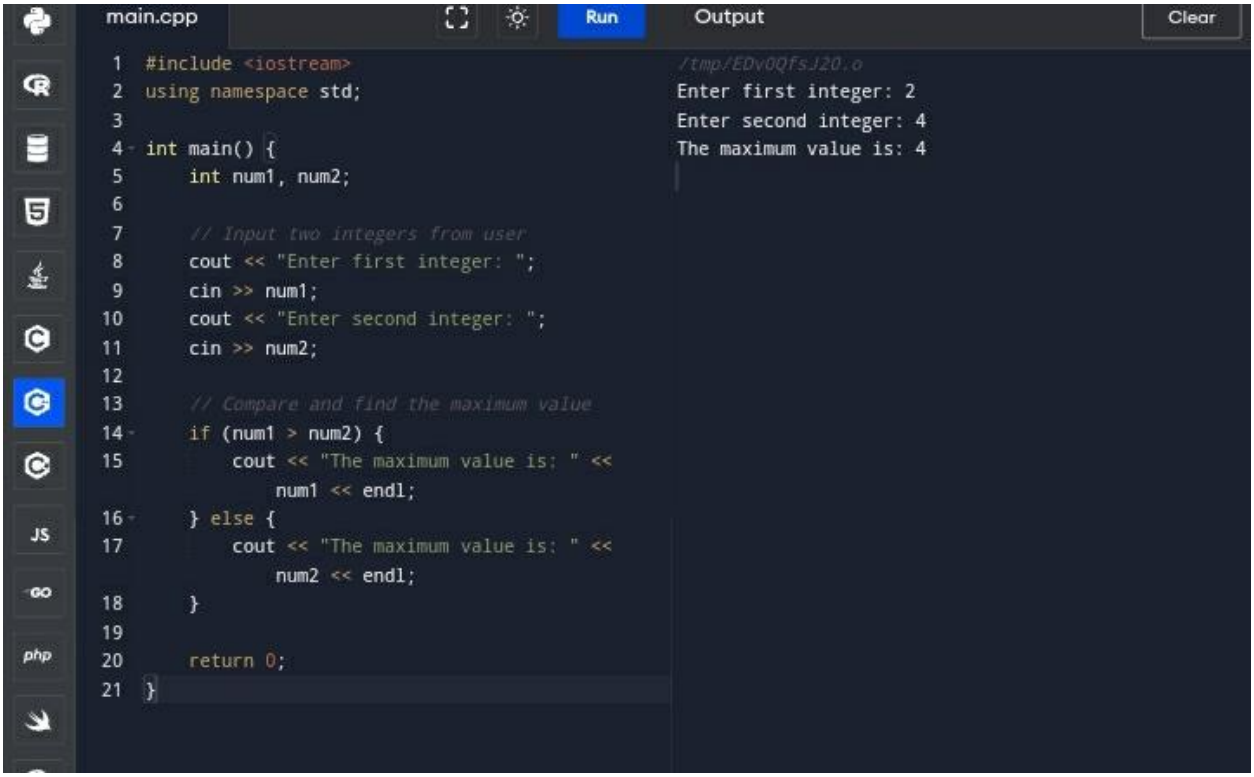
Q1



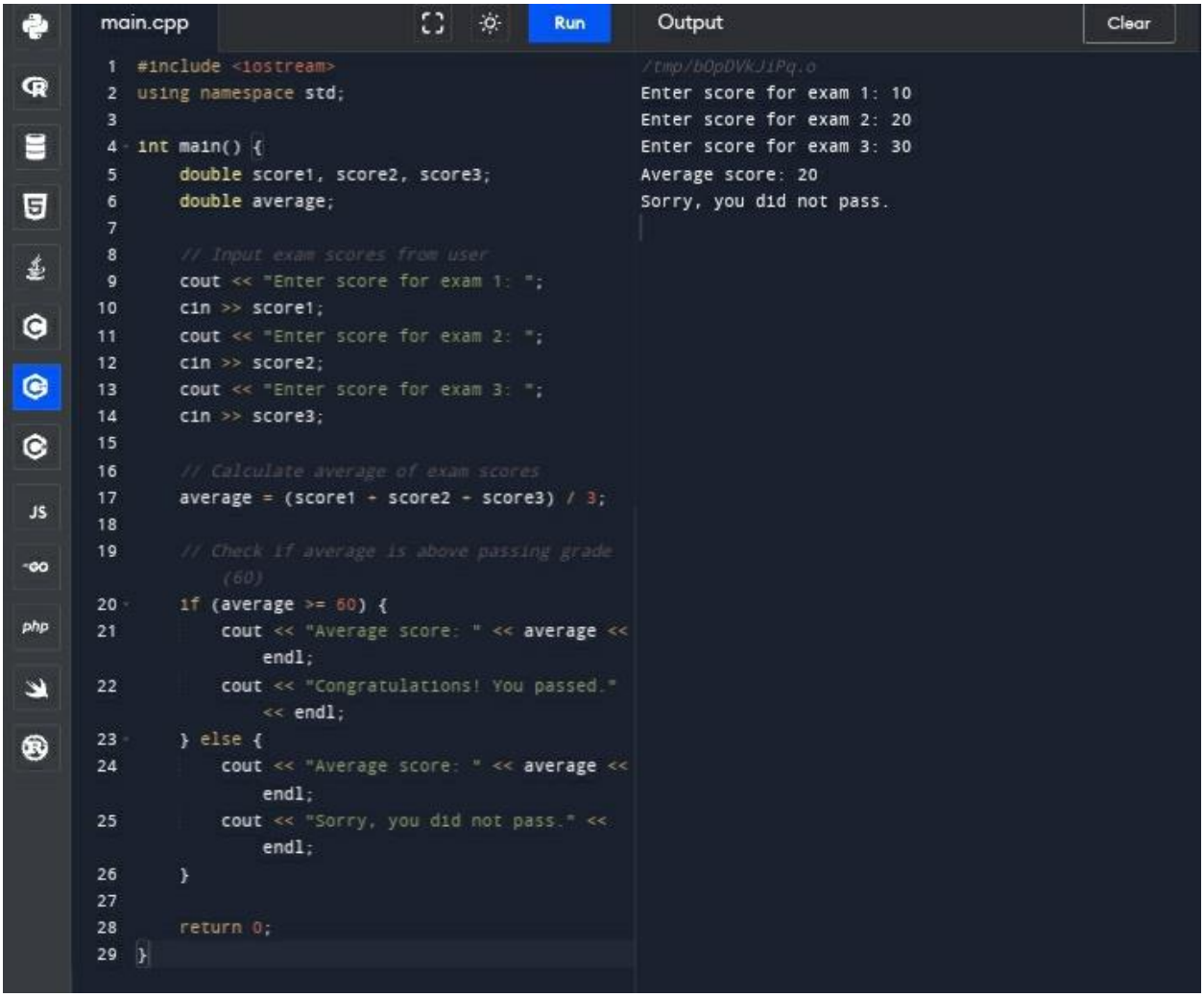
Q2


Compiler
cybersecurity training you need to expand your expertise.
ISACA
main.cpp
Run
Output
Clear
#include <iostream>
using namespace std;
int main() {
int num;
// Input an integer from user
cout << "Enter an integer: ";
cin >> num;
// Check if the number falls within the range [10, 50]
if (num >= 10 && num <= 50) {
cout << "The number is within the range [10, 50]." << endl;
} else {
cout << "The number is not within the range [10, 50]." << endl;
}
return 0;
}
/tmp/EDv0QfsJ20.o
Enter an integer: 4
The number is not within the range [10, 50].
10
dash: 2: 10: not found

Q3


main.cpp
Run
Output
Clear
#include <iostream>
using namespace std;
int main() {
int num1, num2;
// Input two integers from user
cout << "Enter first integer: ";
cin >> num1;
cout << "Enter second integer: ";
cin >> num2;
// Compare and find the maximum value
if (num1 > num2) {
cout << "The maximum value is: " << num1 << endl;
} else {
cout << "The maximum value is: " << num2 << endl;
}
return 0;
}
/tmp/EDv0QfsJ20.o
Enter first integer: 2
Enter second integer: 4
The maximum value is: 4

Q4


main.cpp
Run
Output
Clear
#include <iostream>
using namespace std;
int main() {
double score1, score2, score3;
double average;
// Input exam scores from user
cout << "Enter score for exam 1: ";
cin >> score1;
cout << "Enter score for exam 2: ";
cin >> score2;
cout << "Enter score for exam 3: ";
cin >> score3;
// Calculate average of exam scores
average = (score1 + score2 + score3) / 3;
// Check if average is above passing grade (60)
if (average >= 60) {
cout << "Average score: " << average << endl;
cout << "Congratulations! You passed." << endl;
} else {
cout << "Average score: " << average << endl;
cout << "Sorry, you did not pass." << endl;
}
return 0;
}
/tmp/bOpDVKJ1Pq.o
Enter score for exam 1: 10
Enter score for exam 2: 20
Enter score for exam 3: 30
Average score: 20
Sorry, you did not pass.