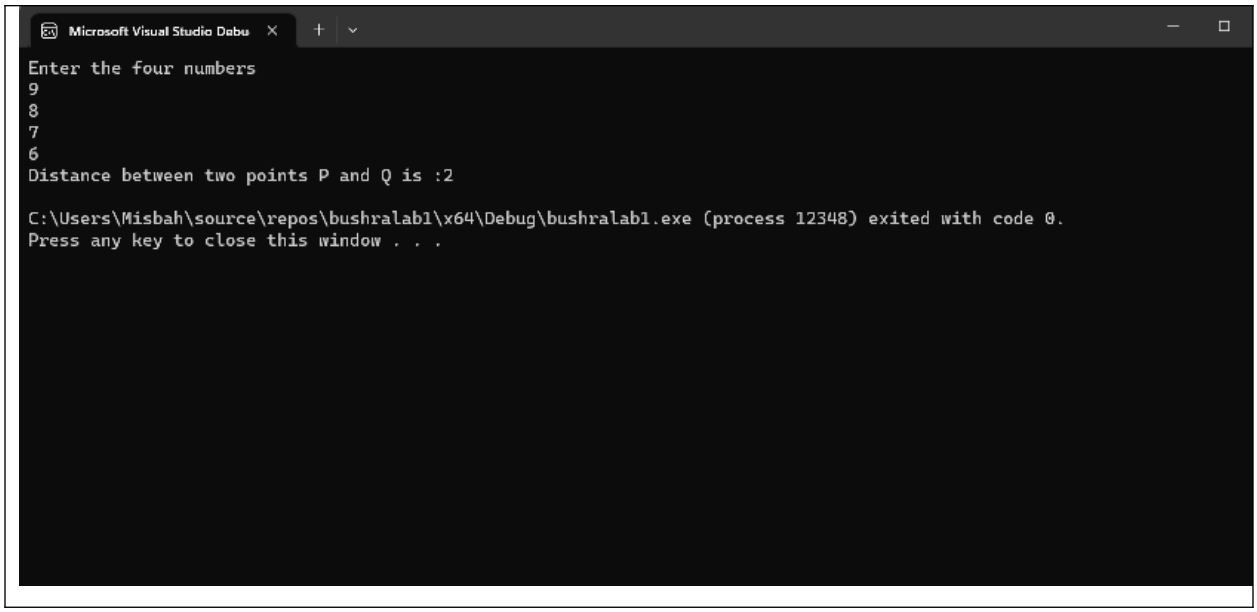
LAB#1

HOME TASK

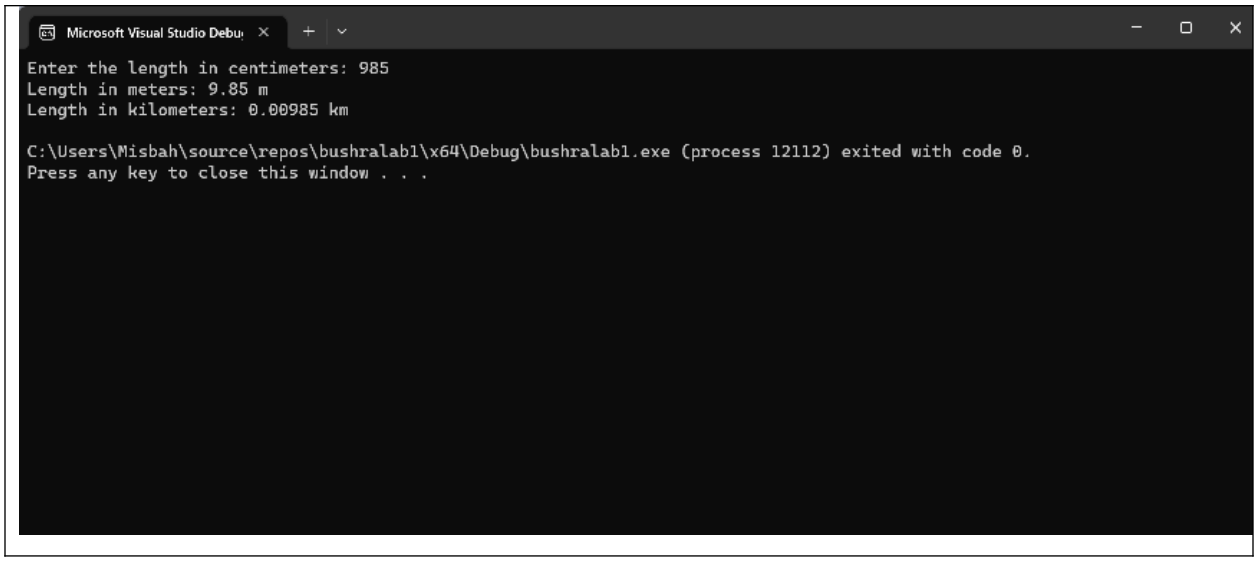
Task#1

```
#include <iostream>
using namespace std;
int main()
{
	int x1, y1, x2, y2,Distance;
	// let two points P(x1,y1) and Q(x2,y2)
	cout << "Enter the four numbers" << endl;
	cin >> x1;
	cin >> y1;
	cin >> x2;
	cin >> y2;
	// Formula of distance between two points
	// D is distance between two points
	Distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));;
		cout << "Distance between two points P and Q is :" << Distance << endl;


	return 0;
}
```



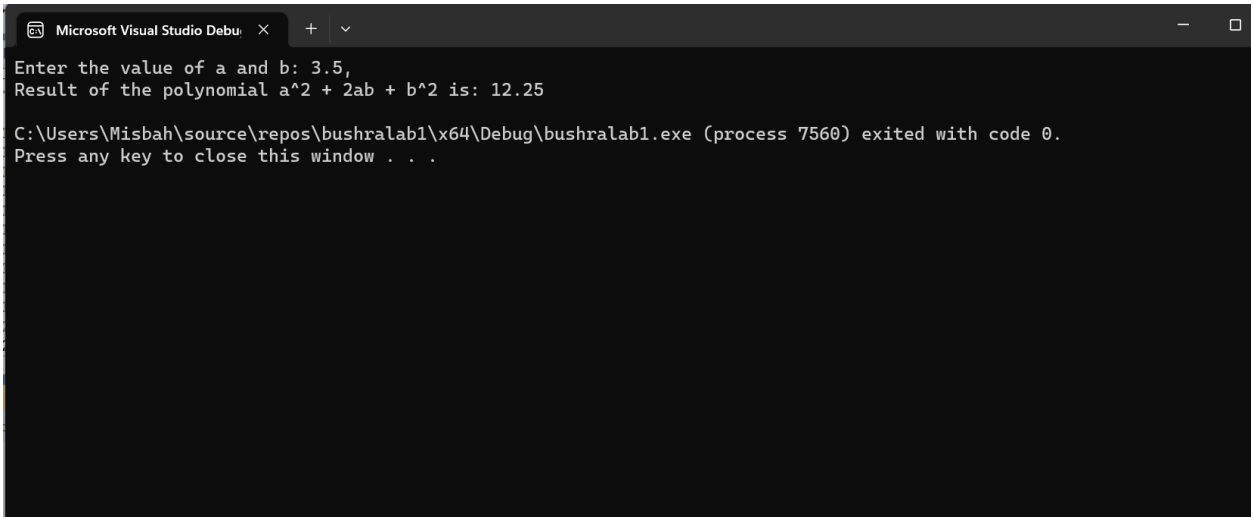
Task#2

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

int main() {
    double centimeters, meters, kilometers;

    // Input the length in centimeters
    cout << "Enter the length in centimeters: ";
    cin >> centimeters;

    // Convert centimeters to meters and kilometers
    // 1 meter = 100 centimeters
    meters = centimeters / 100.0;
    // 1 kilometer = 100,000 centimeters
    kilometers = centimeters / 100000.0;
    cout << "Length in meters: " << meters << " m" << endl;
    cout << "Length in kilometers: " << kilometers << " km" << endl;

    return 0;
}
```



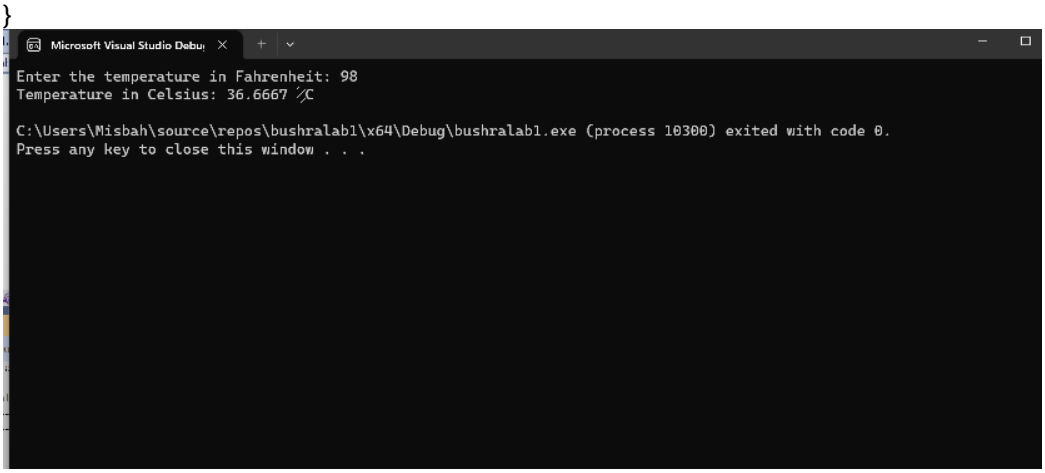
Task#3

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

int main() {
   double a, b,result;

   // Input values of 'a' and 'b'
   cout << "Enter the value of a and b: ";
   cin >> a;
   cin >> b;

   // Calculate the result of the polynomial a^2 + 2ab + b^2
   result = a * a + 2 * a * b + b * b;

   cout << "Result of the polynomial a^2 + 2ab + b^2 is: " << result << endl;

   return 0;
}
```



Task#4

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

int main() {
    double fahrenheit, celsius;

    // Input the temperature in Fahrenheit
    cout << "Enter the temperature in Fahrenheit: ";
    cin >> fahrenheit;

    // Convert Fahrenheit to Celsius
    celsius = (fahrenheit - 32) * 5.0 / 9.0;

    cout << "Temperature in Celsius: " << celsius << " °C" << endl;

    return 0;
}
```

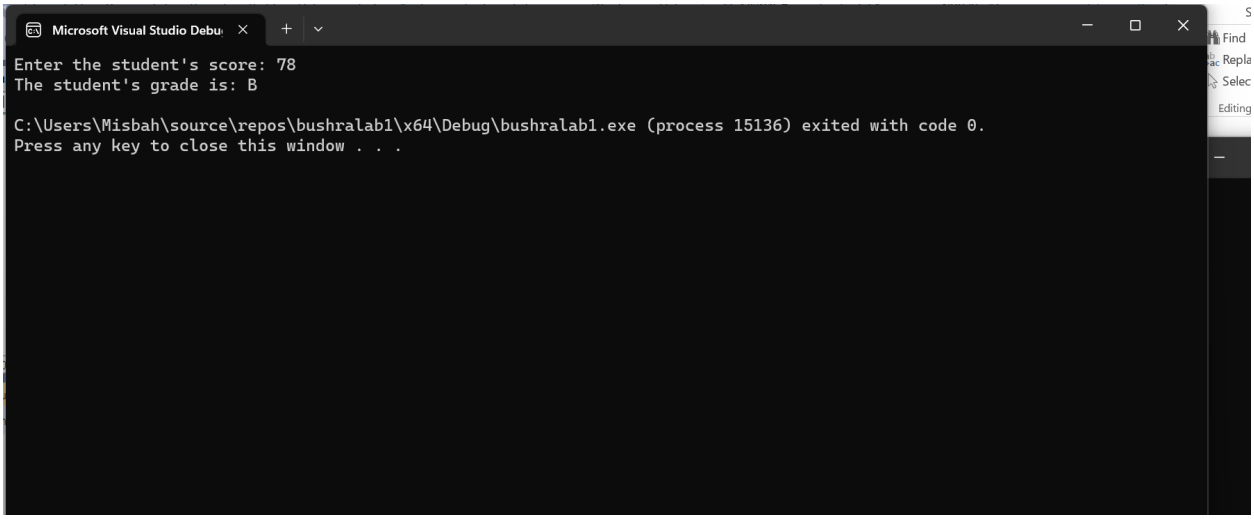


LAB 2

HOME TASK

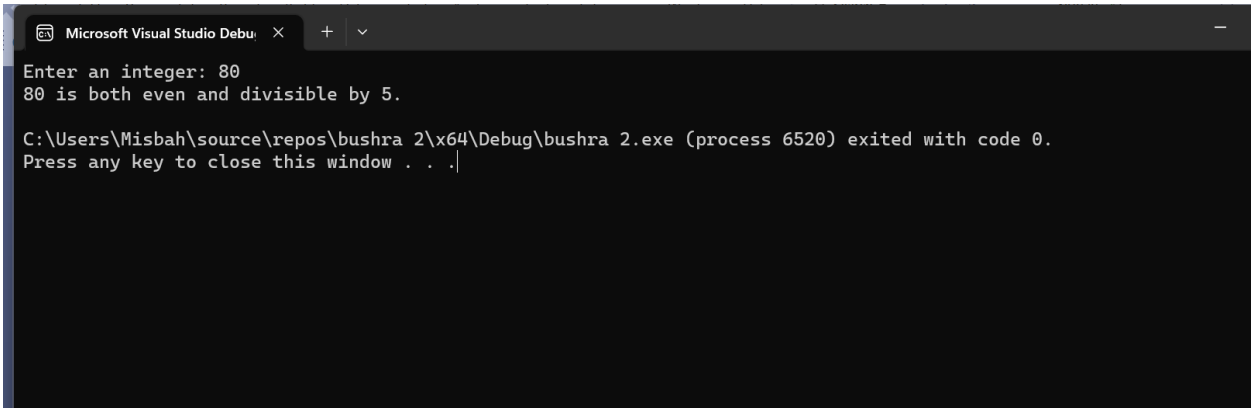
Task#1

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

int main() {
    int score;
    char grade;

    // Input the student's score
    cout << "Enter the student's score: ";
    cin >> score;

    // Assign a grade based on the score using logical operators
    if (score >= 90 && score <= 100) {
        grade = 'A';
    }
    else if (score >= 75 && score < 90) {
        grade = 'B';
    }
    else if (score >= 60 && score < 75) {
        grade = 'C';
    }
    else if (score >= 45 && score < 60) {
        grade = 'D';
    }
    else if (score >= 0 && score < 45) {
        grade = 'F';
    }
    else {
        cout << "Invalid score entered. Score should be between 0 and 100." << endl;
        return 1; // Exit with an error code
    }
    cout << "The student's grade is: " << grade << endl;

    return 0;
}
```



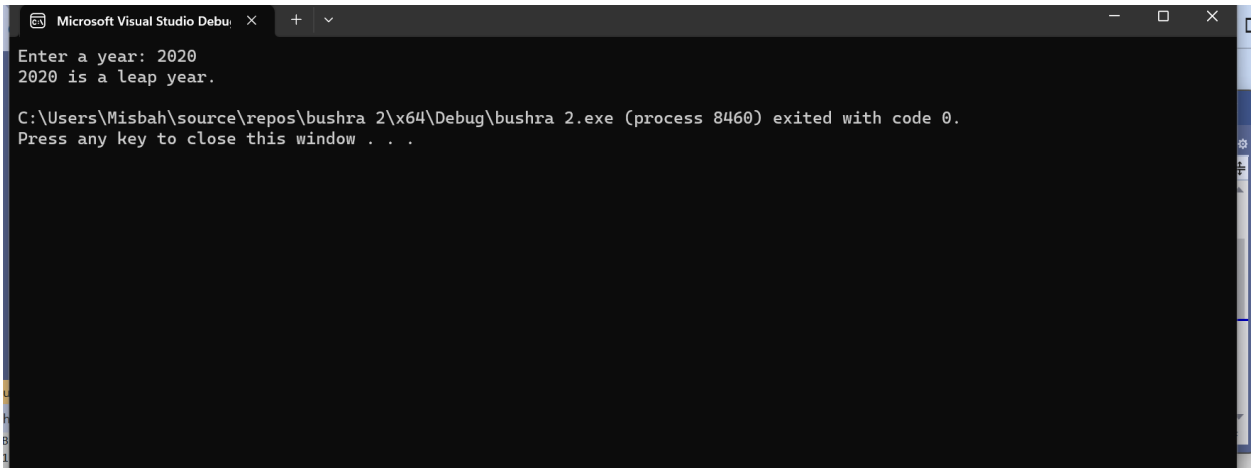
Task#2

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

int main() {
    int num;

    // Input an integer from the user
    cout << "Enter an integer: ";
    cin >> num;

    // Check if the integer is both even and divisible by 5
    if (num % 2 == 0 && num % 5 == 0) {
        cout << num << " is both even and divisible by 5." << endl;
    }
    else {
        cout << num << " is not both even and divisible by 5." << endl;
    }

    return 0;
}
```



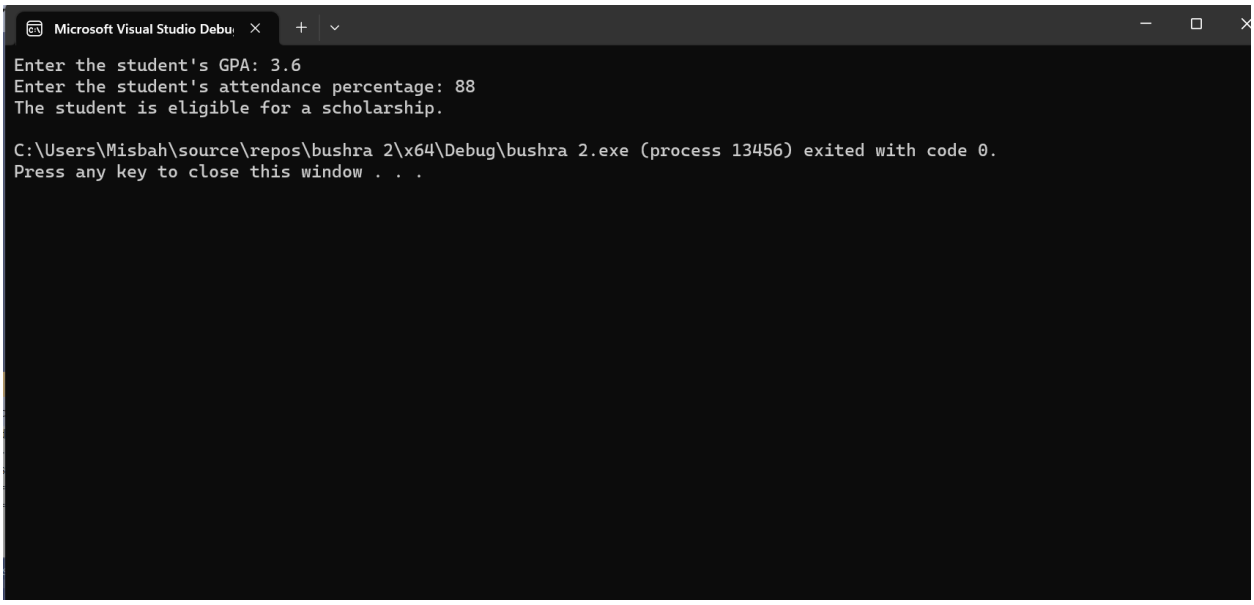
Task#3

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

int main() {
   int year;

   cout << "Enter a year: ";
   cin >> year;

   // Check if it's a leap year
   if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
      cout << year << " is a leap year." << endl;
   }
   else {
      cout << year << " is not a leap year." << endl;
   }
return 0;
}
```



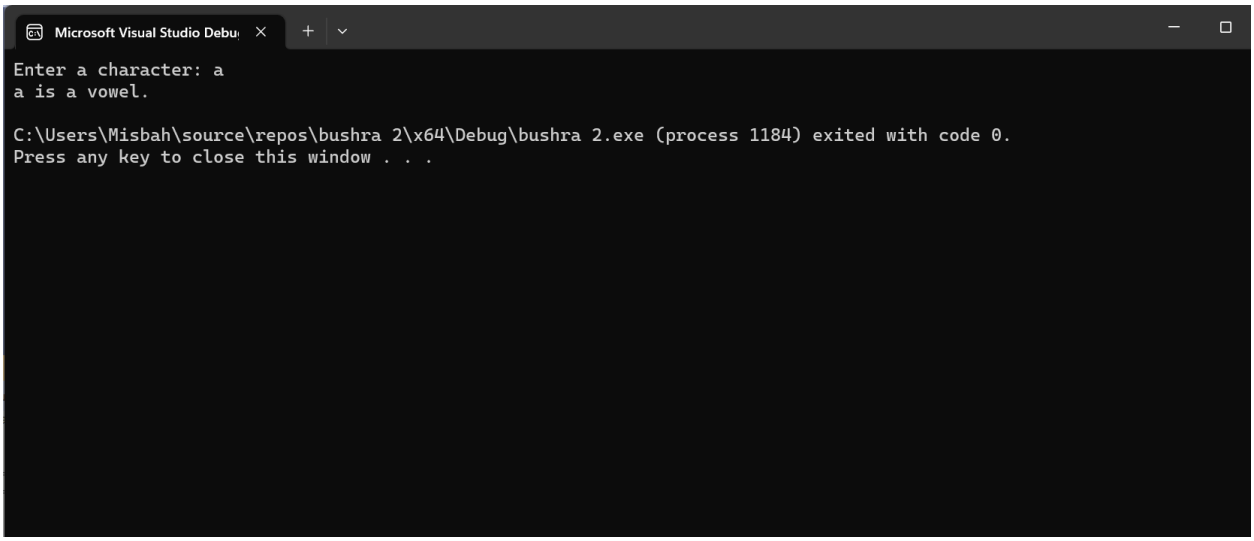
Task#4

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

int main() {
    double gpa;
    double attendancePercentage;

    // Input the student's GPA and attendance percentage
    cout << "Enter the student's GPA: ";
    cin >> gpa;
    cout << "Enter the student's attendance percentage: ";
    cin >> attendancePercentage;

    // Check if the student is eligible for a scholarship
    if (gpa >= 3.5 && attendancePercentage >= 80) {
        cout << "The student is eligible for a scholarship." << endl;
    }
    else {
        cout << "The student is not eligible for a scholarship." << endl;
    }

    return 0;
}
```



Task#5

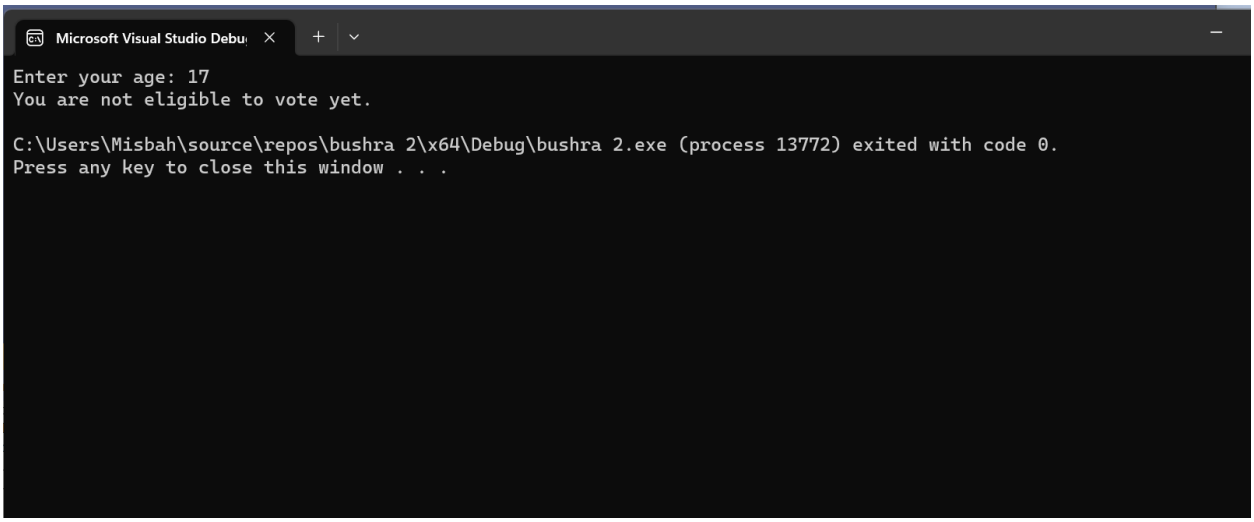
```
#using namespace std;

int main() {
    char character;

    // Input a character from the user
    cout << "Enter a character: ";
    cin >> character;

    // Check if the character is a vowel (a, e, i, o, u)
    if ((character == 'a' || character == 'e' || character == 'i' || character == 'o' || character == 'u') ||
        (character == 'A' || character == 'E' || character == 'I' || character == 'O' || character == 'U')) {
        cout << character << " is a vowel." << endl;
    }
    else {
        cout << character << " is a consonant." << endl;
    }

    return 0;
}
```



LAB TASK

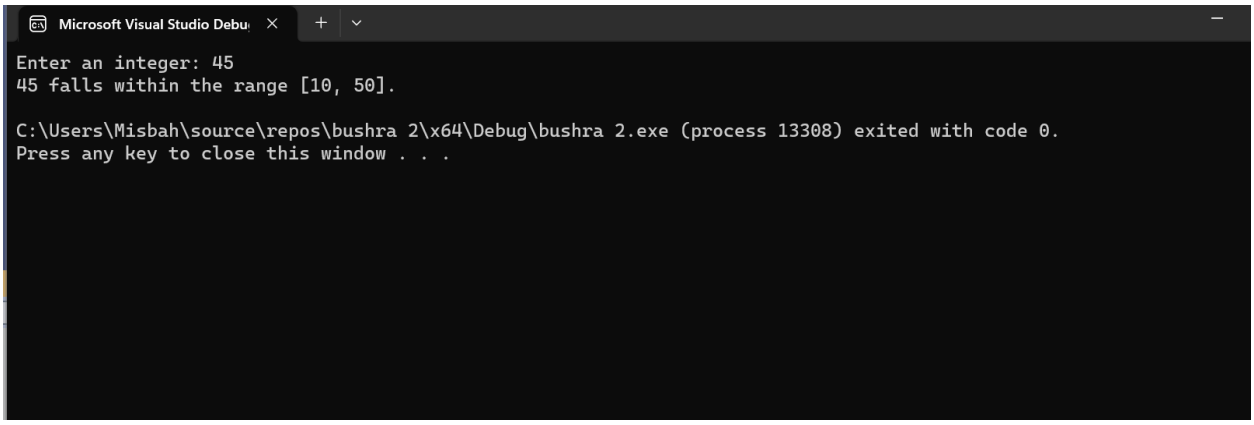
Task#1

```
#include <upstream>
Using namespace STD;

int main () {
   int age;

   // Input the person's age
   cout << "Enter your age: “
   cin >> age;

   // Check if the person is eligible to vote (18 years or older)
   If (age >= 18) {
      cout << "You are eligible to vote!" << Endl;
   }
   else {
      cout << "You are not eligible to vote yet." << Endl;
   }

   return 0;
}
```



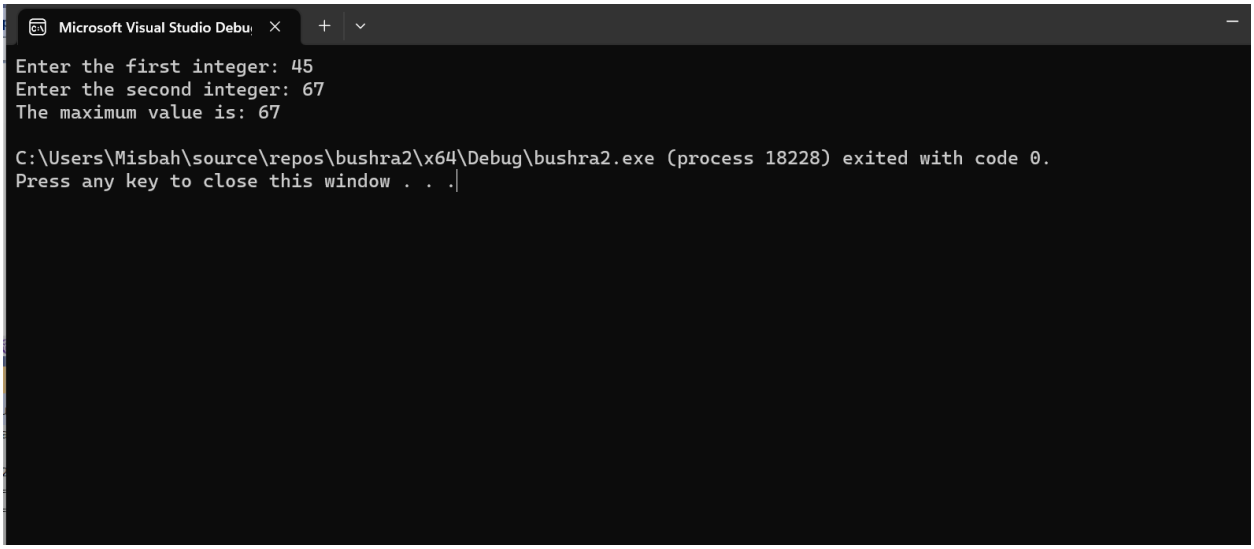
Task#2

```
#include <upstream>
using namespace STD;

In main () {
   In num;

   // Input an integer from the user
   cout << "Enter an integer: “
   cin >> num;

   // Check if the integer falls within the range [10, 50]
   If (num >= 10 && num <= 50) {
      cout << num << “falls within the range [10, 50]." << Endl;
   }
   else {
      cout << num << “does not fall within the range [10, 50]." << Endl;
   }

   return 0;
}
```



Task#3

```
#include <upstream>
Using namespace STD;

int main () {
   int num1, num2, max;

   // Input two integers from the user
   cout << "Enter the first, second integer: “
   cin >> num1;
   cin >> num2;

   // Compare and find the maximum value

   If (num1 > num2) {
      Max = num1;
   }
   Else {
      Max = num2;
   }

   // Display the maximum value
   cout << "The maximum value is: " << max << endl;

   Return 0;
}
```



Task#4

```
#include <iostream>
Using namespace std;

int main () {
   Double score1, score2, score3;

   // Input three exam scores from the user
   cout << "Enter the score for the first ,second ,third: "
   cin >> score1;
   cin >> score2;
   cin >> score3;
   // calculate the average score
   Double average = (score1 + score2 + score3) / 3.0;

   // Check if the average is above a passing grade (e.g., >= 60)
   If (average >= 60) {
      cout << "The average score is" << average << "which is above a passing grade." << Endl;
   } else {
```

```
    cout << "The average score is" << average << "which is below a passing grade." << endl;
  }

  return 0;
}
```