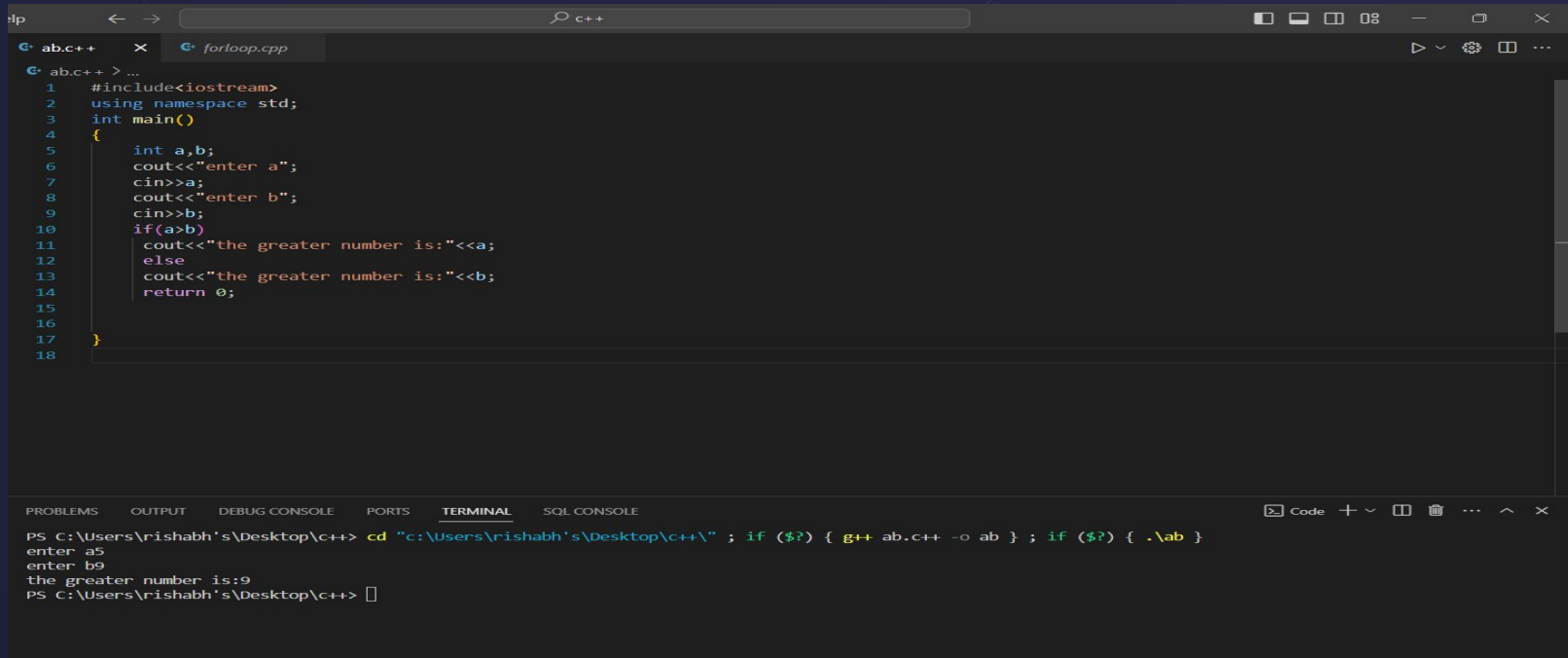


Assignment : L3

If-Else

COLLEGE
WALLAH

Ques : Take 2 integers input and print the greatest of them.



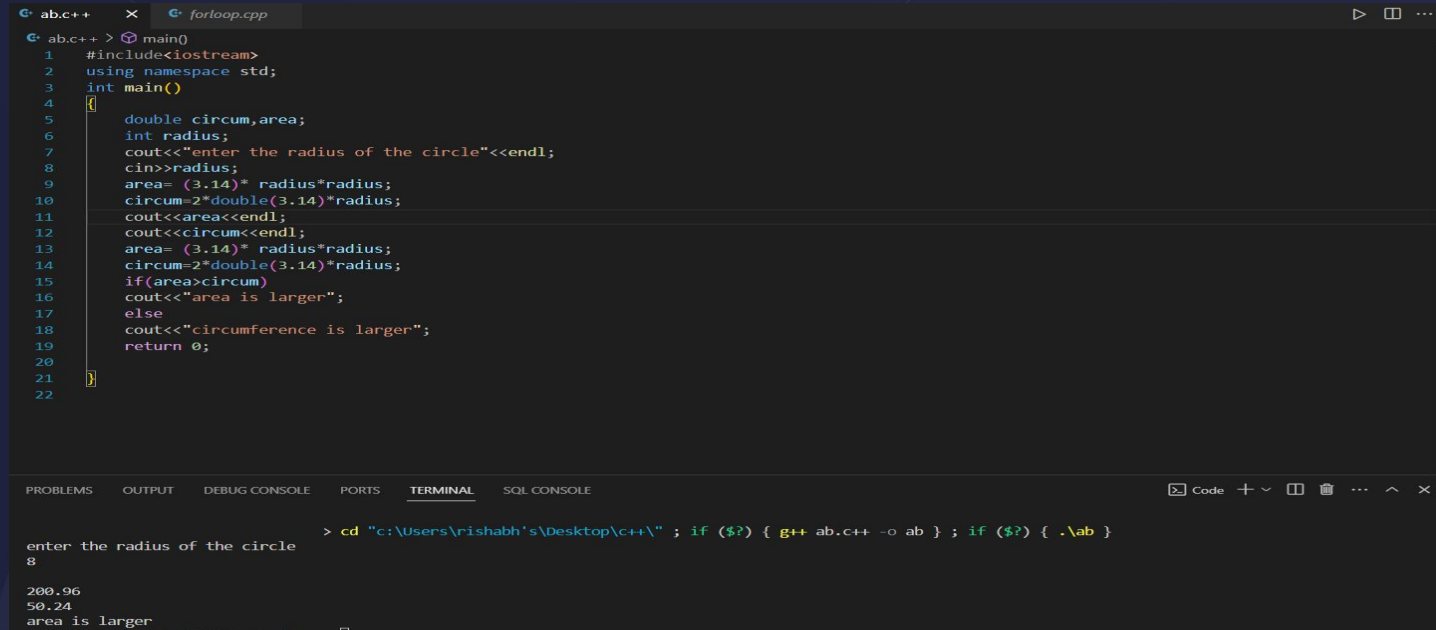
The screenshot shows a C++ IDE with a file named `ab.c++` open. The code is as follows:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int a,b;
6     cout<<"enter a";
7     cin>>a;
8     cout<<"enter b";
9     cin>>b;
10    if(a>b)
11        cout<<"the greater number is:"<<a;
12    else
13        cout<<"the greater number is:"<<b;
14    return 0;
15 }
16
17
18
```

The terminal output shows the execution of the program:

```
PS C:\Users\rishabh's\Desktop\c++> cd "c:\Users\rishabh's\Desktop\c++\" ; if ($?) { g++ ab.c++ -o ab } ; if ($?) { .\ab }
enter a5
enter b9
the greater number is:9
PS C:\Users\rishabh's\Desktop\c++>
```

Ques : Given the radius of the circle predict whether numerically area of this circle is larger than the circumference or not.



```
ab.c++ x forloop.cpp
main()
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     double circum,area;
6     int radius;
7     cout<<"enter the radius of the circle"<<endl;
8     cin>>radius;
9     area= (3.14)* radius*radius;
10    circum=2*double(3.14)*radius;
11    cout<<area<<endl;
12    cout<<circum<<endl;
13    area= (3.14)* radius*radius;
14    circum=2*double(3.14)*radius;
15    if(area>circum)
16        cout<<"area is larger";
17    else
18        cout<<"circumference is larger";
19    return 0;
20 }
21
22
```

PROBLEMS OUTPUT DEBUG CONSOLE PORTS TERMINAL SQL CONSOLE

> cd "c:\Users\rishabh's\Desktop\c++\" ; if (\$?) { g++ ab.c++ -o ab } ; if (\$?) { .\ab }

enter the radius of the circle
8

200.96
50.24
area is larger

Ques : Any year is input through the keyboard. Write a program to determine whether the year is a leap year or not. (Considering leap year occurs after every 4 years)

```

ab.c++ > main()
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int year;
6
7      // Input year from the user
8      cout << "Enter a year: ";
9      cin >> year;
10
11     // Check if the year is divisible by 4
12     if (year % 4 == 0) {
13         // Check if it is divisible by 100 and not divisible by 400
14         if (year % 100 == 0 && year % 400 != 0)
15             cout << year << " is not a leap year." << endl;
16         else
17             cout << year << " is a leap year." << endl;
18     } else {
19         cout << year << " is not a leap year." << endl;
20     }
21
22     return 0;
23 }
24

```

PROBLEMS OUTPUT DEBUG CONSOLE PORTS TERMINAL SQL CONSOLE

Code + - [] [x] ... ^ x

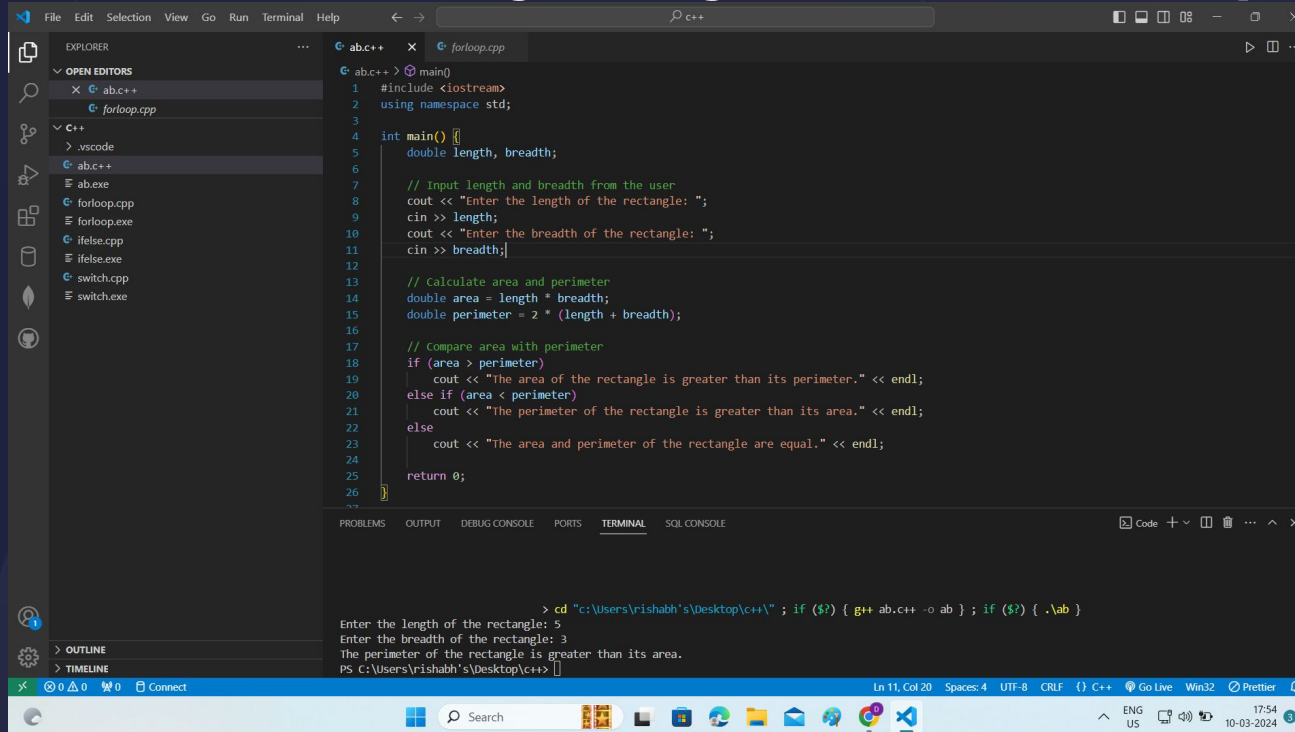
```

> cd "C:\Users\rishabh's\Desktop\c++\" ; if ($?) { g++ ab.c++ -o ab } ; if ($?) { .\ab }

Enter a year: 2002
2002 is not a leap year.
PS C:\Users\rishabh's\Desktop\c++>

```

Ques : Given the length and breadth of a rectangle, write a program to find whether numerically the area of the rectangle is greater than its perimeter.



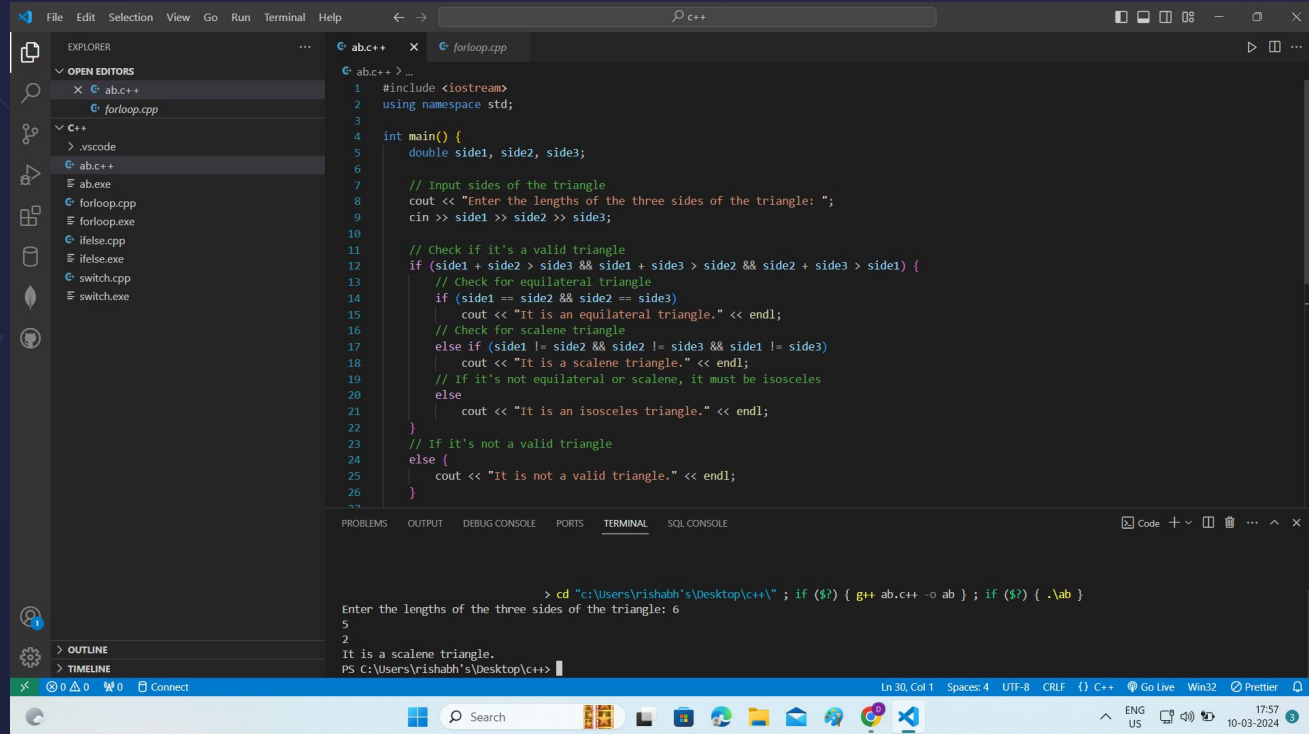
```

1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      double length, breadth;
6
7      // Input length and breadth from the user
8      cout << "Enter the length of the rectangle: ";
9      cin >> length;
10     cout << "Enter the breadth of the rectangle: ";
11     cin >> breadth;
12
13     // Calculate area and perimeter
14     double area = length * breadth;
15     double perimeter = 2 * (length + breadth);
16
17     // Compare area with perimeter
18     if (area > perimeter)
19         cout << "The area of the rectangle is greater than its perimeter." << endl;
20     else if (area < perimeter)
21         cout << "The perimeter of the rectangle is greater than its area." << endl;
22     else
23         cout << "The area and perimeter of the rectangle are equal." << endl;
24
25     return 0;
26 }

```

> cd "c:\Users\rishabh's\Desktop\c++\" ; if (\$?) { g++ ab.cpp -o ab } ; if (\$?) { .\ab }
 Enter the length of the rectangle: 5
 Enter the breadth of the rectangle: 3
 The perimeter of the rectangle is greater than its area.
 PS C:\Users\rishabh's\Desktop\c++>

Ques : Write a program to input sides of a triangle and check whether a triangle is equilateral, scalene or isosceles triangle.



```

1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     double side1, side2, side3;
6
7     // Input sides of the triangle
8     cout << "Enter the lengths of the three sides of the triangle: ";
9     cin >> side1 >> side2 >> side3;
10
11     // Check if it's a valid triangle
12     if (side1 + side2 > side3 && side1 + side3 > side2 && side2 + side3 > side1) {
13         // Check for equilateral triangle
14         if (side1 == side2 && side2 == side3)
15             cout << "It is an equilateral triangle." << endl;
16         // Check for scalene triangle
17         else if (side1 != side2 && side2 != side3 && side1 != side3)
18             cout << "It is a scalene triangle." << endl;
19         // If it's not equilateral or scalene, it must be isosceles
20         else
21             cout << "It is an isosceles triangle." << endl;
22     }
23     // If it's not a valid triangle
24     else {
25         cout << "It is not a valid triangle." << endl;
26     }
27 }

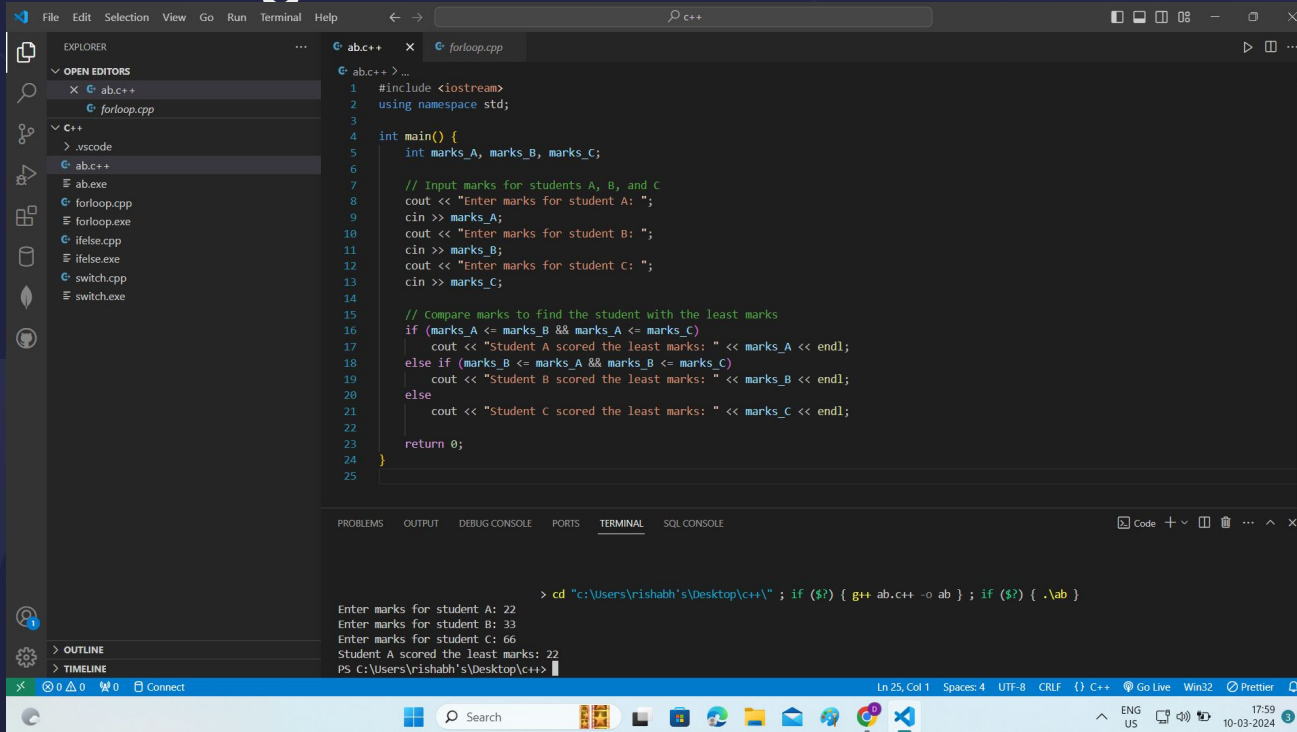
```

```

> cd "C:\Users\rishabh\Desktop\c++\"; if ($?) { g++ ab.c++ -o ab }; if ($?) { .\ab }
Enter the lengths of the three sides of the triangle: 6
5
2
It is a scalene triangle.
PS C:\Users\rishabh\Desktop\c++>

```

Ques : If the marks of A, B and C are input through the keyboard, write a program to determine the student scoring least marks.



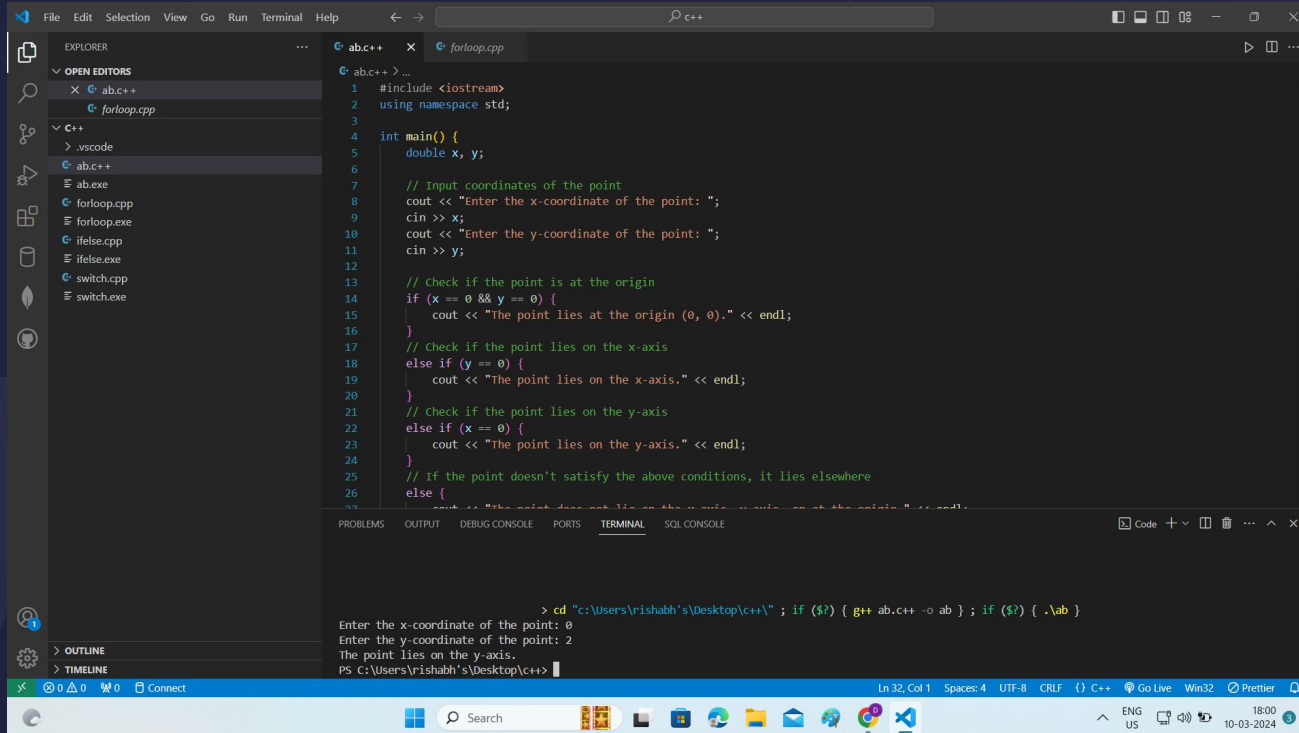
```

1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int marks_A, marks_B, marks_C;
6
7      // Input marks for students A, B, and C
8      cout << "Enter marks for student A: ";
9      cin >> marks_A;
10     cout << "Enter marks for student B: ";
11     cin >> marks_B;
12     cout << "Enter marks for student C: ";
13     cin >> marks_C;
14
15     // Compare marks to find the student with the least marks
16     if (marks_A <= marks_B && marks_A <= marks_C)
17         cout << "Student A scored the least marks: " << marks_A << endl;
18     else if (marks_B <= marks_A && marks_B <= marks_C)
19         cout << "Student B scored the least marks: " << marks_B << endl;
20     else
21         cout << "Student C scored the least marks: " << marks_C << endl;
22
23     return 0;
24 }
25

```

Enter marks for student A: 22
Enter marks for student B: 33
Enter marks for student C: 66
Student A scored the least marks: 22
PS C:\Users\rishabh's\Desktop\c++>

Ques : Given a point (x, y) , write a program to find out if it lies on the x-axis, y-axis or at the origin, viz. $(0, 0)$.



```

1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     double x, y;
6
7     // Input coordinates of the point
8     cout << "Enter the x-coordinate of the point: ";
9     cin >> x;
10    cout << "Enter the y-coordinate of the point: ";
11    cin >> y;
12
13    // Check if the point is at the origin
14    if (x == 0 && y == 0) {
15        cout << "The point lies at the origin (0, 0)." << endl;
16    }
17    // Check if the point lies on the x-axis
18    else if (y == 0) {
19        cout << "The point lies on the x-axis." << endl;
20    }
21    // Check if the point lies on the y-axis
22    else if (x == 0) {
23        cout << "The point lies on the y-axis." << endl;
24    }
25    // If the point doesn't satisfy the above conditions, it lies elsewhere
26    else {
27        cout << "The point does not lie on the x-axis, y-axis, or at the origin." << endl;
28    }
29 }

```

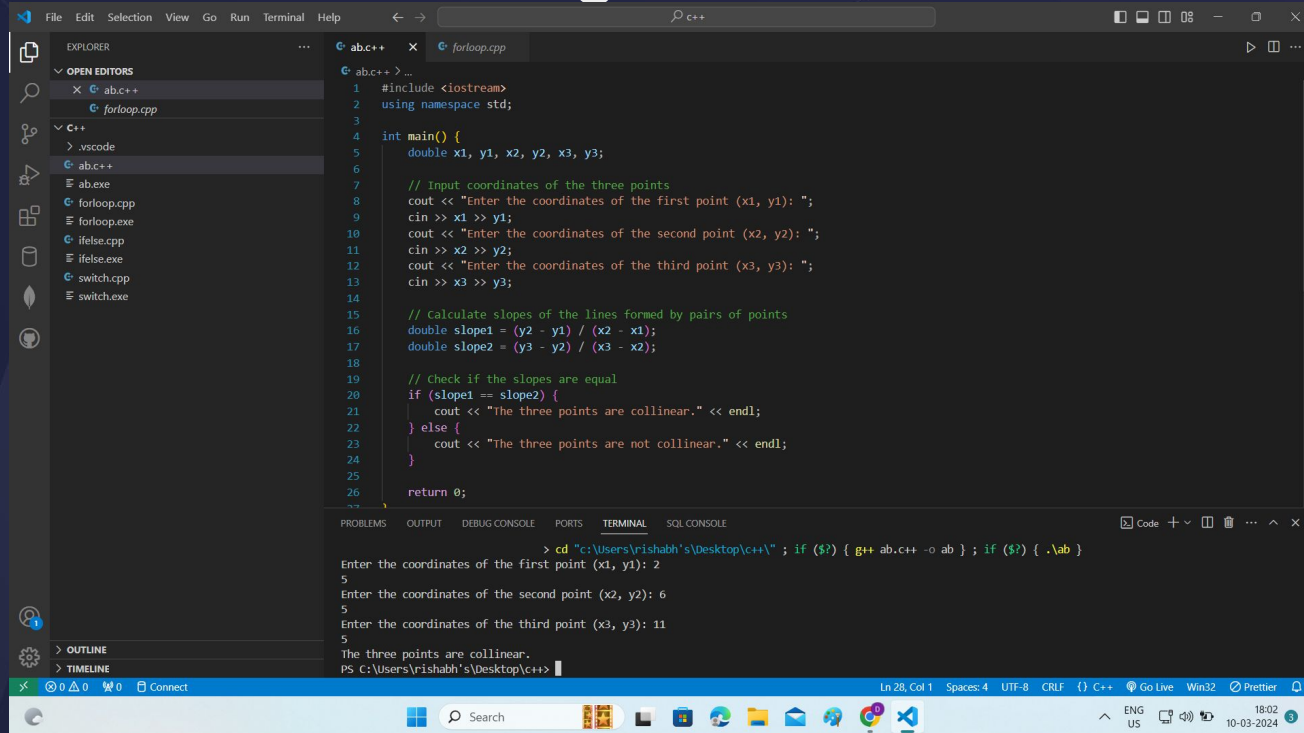
Terminal Output:

```

> cd "C:\Users\rishabh\Desktop\c++\"; if ($?) { g++ ab.cpp -o ab }; if ($?) { .\ab }
Enter the x-coordinate of the point: 0
Enter the y-coordinate of the point: 2
The point lies on the y-axis.
PS C:\Users\rishabh\Desktop\c++>

```


Ques : Given three points (x_1, y_1) , (x_2, y_2) and (x_3, y_3) , write a program to check if all the three points fall on one straight line.



```

1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      double x1, y1, x2, y2, x3, y3;
6
7      // Input coordinates of the three points
8      cout << "Enter the coordinates of the first point (x1, y1): ";
9      cin >> x1 >> y1;
10     cout << "Enter the coordinates of the second point (x2, y2): ";
11     cin >> x2 >> y2;
12     cout << "Enter the coordinates of the third point (x3, y3): ";
13     cin >> x3 >> y3;
14
15     // Calculate slopes of the lines formed by pairs of points
16     double slope1 = (y2 - y1) / (x2 - x1);
17     double slope2 = (y3 - y2) / (x3 - x2);
18
19     // Check if the slopes are equal
20     if (slope1 == slope2) {
21         cout << "The three points are collinear." << endl;
22     } else {
23         cout << "The three points are not collinear." << endl;
24     }
25
26     return 0;
27 }

```

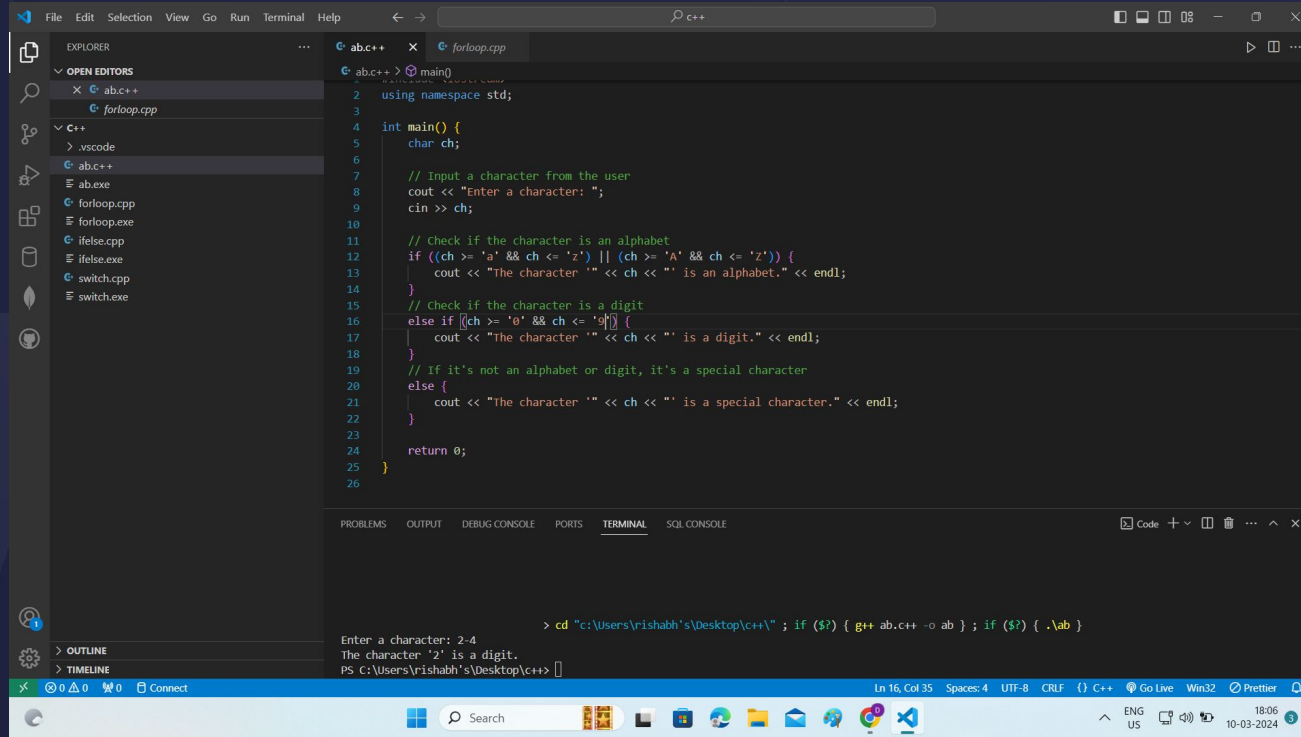
Terminal Output:

```

> cd "C:\Users\rishabh's\Desktop\c++\"; if ($?) { g++ ab.cpp -o ab }; if ($?) { .\ab }
Enter the coordinates of the first point (x1, y1): 2
5
Enter the coordinates of the second point (x2, y2): 6
5
Enter the coordinates of the third point (x3, y3): 11
5
The three points are collinear.
PS C:\Users\rishabh's\Desktop\c++>

```

Ques : Write a C++ program to input any character and check whether it is the alphabet, digit or special character.



```

1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      char ch;
6
7      // Input a character from the user
8      cout << "Enter a character: ";
9      cin >> ch;
10
11     // check if the character is an alphabet
12     if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {
13         cout << "The character " << ch << " is an alphabet." << endl;
14     }
15     // check if the character is a digit
16     else if (ch >= '0' && ch <= '9') {
17         cout << "The character " << ch << " is a digit." << endl;
18     }
19     // If it's not an alphabet or digit, it's a special character
20     else {
21         cout << "The character " << ch << " is a special character." << endl;
22     }
23
24     return 0;
25 }
26

```

Terminal Output:

```

> cd "C:\Users\rishabh\Desktop\c++\" ; if ($?) { g++ ab.cpp -o ab } ; if ($?) { .\ab }
Enter a character: 2-4
The character '2' is a digit.
PS C:\Users\rishabh\Desktop\c++>

```

Predict the output

```
int main() {
    int a = 500, b, c ;
    if ( a ≥ 400 )
        b = 300 ;
        c = 200 ;

    cout << "value of b
and c are respectively "
<<b<<" and " << c ;
    return 0;
}
```

ANSWER:

Value of b and c are respectively 300 and 400

THANK YOU

COLLEGE
WALLAH