Activity No. 1.2	
Basic C++ Programming	
Course Code: CPE010	**Program:** Computer Engineering
Course Title: Data Structures and Algorithms	**Date Performed:** 09 / 09 / 2024
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6. Output

Sections	Sample Code
Header File Declaration Section	`#include <iostream>` `using namespace std;`
Global Declaration Section	`N/A`

Class Declaration and Method Definition Section	`class Triangle`
	`{`
	`  private:`
	`  double totalAngle, angleA, angleB, angleC;`
	`  public:`
	`  Triangle(double A, double B, double C);`
	`  void setAngles(double A, double B, double C);`
	`  const bool validateTriangle();`
	`};`

Main Function	`int main(){`
	`//driver code`
	`Triangle set1(40, 30, 110);`
	
	`if(set1.validateTriangle()){`
	`  cout << "The shape is a valid triangle.\n";`
	`}`
	`else {`
	`  cout << "The shape is NOT a valid triangle.\n";`
	`}`
	`  return 0;`
	`}`

Method Definition	`Triangle::Triangle(double A, double B, double C) {`
	`  angleA = A;`
	`  angleB = B;`
	`  angleC = C;`
	`  totalAngle = A+B+C;`
	`}`
	
	`void Triangle::setAngles(double A, double B, double C) {`
	`  angleA = A;`
	`  angleB = B;`
	`  angleC = C;`
	`  totalAngle = A+B+C;`
	`}`
	
	`const bool Triangle::validateTriangle() {`
	`  return (totalAngle <= 180);`
	`}`

OUTPUT OF CODE:

main.cpp

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

class Triangle
{
    private:
        double totalAngle, angleA, angleB, angleC;
    public:
        Triangle(double A, double B, double C);
        void setAngles(double A, double B, double C);
        const bool validateTriangle();
};

Triangle::Triangle(double A, double B, double C) {
    angleA = A;
    angleB = B;
    angleC = C;
    totalAngle = A+B+C;
}

void Triangle::setAngles(double A, double B, double C) {
    angleA = A;
    angleB = B;
    angleC = C;
    totalAngle = A+B+C;
}

const bool Triangle::validateTriangle() {
    return (totalAngle <= 180);
}

int main(){
//driver code
Triangle set1(40, 30, 110);

if(set1.validateTriangle()){
    cout << "The shape is a valid triangle.\n";
}

else {
    cout << "The shape is NOT a valid triangle.\n";
}
    return 0;
}
```

input

```
The shape is a valid triangle.


...Program finished with exit code 0
Press ENTER to exit console.
```

7. Supplementary Activity

1.

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

int var1, var2, null;

int main()
{
     cout << "Enter value for var1: ";
     cin >> var1;

     cout << "Enter value for var2: ";
     cin >> var2;

     null = var2;
     var2 = var1;
     var1 = null;

     cout << "Value of var1: " << var1 << endl;
     cout << "Value of var2: " << var2;

     return 0;
}
```

```
Enter value for var1: 1
Enter value for var2: 2
Value of var1: 2
Value of var2: 1

...Program finished with exit code 0
Press ENTER to exit console.
```

2.

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

float kelvin, fahrenheit;

int main()
{
    cout << "Enter Temperature in Kelvin(K): ";
    cin >> kelvin;

    fahrenheit = (9.0/5) * (kelvin - 273.15) + 32;

    cout << "\nTemperature in Fahrenheit: " << fahrenheit;
    return 0;
}
```

```
input
Enter Temperature in Kelvin(K): 100

Temperature in Fahrenheit: -279.67

...Program finished with exit code 0
Press ENTER to exit console.
```

3.

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

double x_1, y_1, x_2, y_2, result;

int main()
{
    cout << "Enter x-coord of 1st point: ";
    cin >> x_1;
    cout << "Enter y-coord of 1st point: ";
    cin >> y_1;

    cout << "Enter x-coord of 2nd point: ";
    cin >> x_2;
    cout << "Enter y-coord of 2nd point: ";
    cin >> y_2;

    result = sqrt(pow(x_2 - x_1, 2) + pow(y_2 - y_1, 2));

    cout << "\nDistance: " << result;

    return 0;
}
```

```
Enter x-coord of 1st point: 1
Enter y-coord of 1st point: 2
Enter x-coord of 2nd point: 4
Enter y-coord of 2nd point: 6

Distance: 5

...Program finished with exit code 0
Press ENTER to exit console.
```

8. Conclusion

I have been refreshed in the C++ programming language. I have managed to discern and dissect different parts to the given code. I had a hard time completing #3 in supplementary.

9. Assessment Rubric