C++ Assignments | Fundamentals of Programming -1 | Week2

1. Take 2 integers input and print the greatest of them

```
#include <iostream>
using namespace std;
int main()
{
    cout << "Enter the number 1 :";
    int n1;
    cin >> n1;
    cout << "Enter the number 2 :";
    int n2;
    cin >> n2;
    if (n1>n2)
    {
        cout<<n1<<"Number is greatest Number"<<endl;
    }
    else{
        cout<<n2<<" Number is greatest Number"<<endl;
    }
    return 0;
}
```

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

```
#include <iostream>
using namespace std;
int main()
{
    cout << "Enter the Radius  :";
    int r;
```

```
    cin >>r;
    float Area,circumference;
    Area=3.14*r*r;
    circumference=2*3.14*r;
    if (Area>circumference)
    {
        cout<<"Area Is Greater than circumference";
    }
    else{
        cout<<"Circumference is Greater";
    }
    return 0;
}
```

3.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)

Solution:-

```
#include<iostream>

using namespace std;

int main()

{

    cout<<"Enter the Year:";

    int year;

    cin>>year;
```

```
    if (year%4==0)

    {

        cout<<year<<" Yes";

    }else{

        cout<<"No";

    }

    return 0;

}
```

4.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.

Solution:-

```
#include<iostream>
using namespace std;
int main()
{
  cout<<"Enter the Length :";
  int length;
  cin>>length;
  cout <<"Enter the Breadth:";
  int breadth;
  cin>>breadth;
  float Area,perimeter;
  Area=length*breadth;
  perimeter=2*(length+breadth);
  if (Area>perimeter){
      cout<<"Area is greater than perimeter";
  }
  else{
      cout<<"Perimeter is Greater :";
  }
}
```

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

Solution:-

```
#include <iostream>

using namespace std;

int main()

{

    cout << "Enter the Sides of triangle:";

    int a, b, c;

    cin >> a >> b >> c;

    if (a == b && b == c)

    {

        cout << "The triangle is an equilateral triangle:";

    }

    else if (a == b || b == c)

        {

            cout << "The triangle is an isosceles triangle:";

        }

        else

        {

            cout << " The triangle is an Scalene triangle:";

        }

        return 0;

    }
```

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

Solution:-

```
#include <iostream>

using namespace std;

int main()
```

```
{
    cout<<"Enter the Marks A:";
    int A;
    cin>>A;
    cout<<"Enter the Marks B:";
    int B;
    cin>>B;
    cout<<"Enter the Marks C:";
    int C;
    cin>>C;
    if (A<B&&A<C)
    {
        cout<<"A has the least marks";
    }
    else if (B<A&&B<C)
    {
        cout<<"B has the least marks";
    }
    else{
        cout<<"C has the least marks";
    }
    return 0;
}
```

7.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)

Solution:-

```
#include<iostream>
```

```
using namespace std;

int main()

{

    cout<<"Enter the x value:";

    int x;

    cin>>x;

      cout<<"Enter the y value:";

    int y;

    cin>>y;

    if (x==0&&y==0)

    {

        cout<<"Point lies on the origin";

    }

    else if (x>0&&y>=0)
```

```
    {

        cout<<"Point lies on the  x-axis";

    }

    else{

        cout<<"Point lies on y-axis";

    }

}
```

8.Given three points (x1, y1), (x2, y2) and

(x3, y3), write a program to check if all the three points fall on one straight line.

Solution;-

```
#include <iostream>
using namespace std;
int main() {
 float x1, y1, x2, y2, x3, y3, slope1, slope2;
 cout << "Enter points (x1, y1)" << endl;
 cin >> x1 >> y1;
 cout << "Enter points (x2, y2)" << endl;
 cin >> x2 >> y2;
 cout << "Enter points (x3, y3)" << endl;
 cin >> x3 >> y3;
```

```
 slope1 = (y2 - y1) / (x2 - x1);
 slope2 = (y3 - y2) / (x3 - x2);
 if (slope1 == slope2) {
 cout << "All 3 points lie on the same line";
 } else {
 cout << "All 3 points do not lie on the same line";
 }
 return 0;
}
```

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

```
#include<iostream>
using namespace std;
int main() {
 char ch;
 cout << "Enter any character : ";
 cin >> ch;
 if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {
 cout << ch << " is an Alphabet";
 } else if (ch >= '0' && ch <= '9') {
 cout << ch << " is a Digit";
 } else {
 cout << ch << " is a Special Character";
 }
 return 0;
}
```

10.Predict the output of the below code:

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

```
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;
}
```

sOLUTION:- 300 200