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Inheritance Introduction 🔖

H   **by saikiran9194**

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One of the important topics of Object Oriented Programming is Inheritance. Inheritance allows us to define a class in terms of another class, which allows us in the reusability of the code.Check out the code below:

```
class Triangle{
    public:
        void triangle(){
            cout<<"I am a triangle\n";
        }
};
```

The class Triangle has a function called triangle(). Now we create a class derived from the base class Triangle called Isosceles.

```
class Isosceles : public Triangle{
    public:
        void isosceles(){
            cout<<"I am an isosceles triangle\n";
        }
};
```

Now we can create a derived class object and use it to access the functions of the base class.

```
int main(){
    Isosceles isc;
    isc.isosceles();
    isc.triangle();
    return 0;
}
```

This code will print:

```
I am an isosceles triangle
I am a triangle
```

Now write a function in Isosceles class such that the output is as given below.

Sample Output

```
I am an isosceles triangle
In an isosceles triangle two sides are equal
I am a triangle
```

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```cpp
16  #include <iostream>
17  #include <memory>
18
19  class Shape
20  {
21  public:
22      virtual const void triangle()const = 0;
23      virtual ~Shape(){}
24  };
25
26  class Triangle: public Shape
27  {
28  public:
29      virtual const void triangle()const override
30      {   std::cout<<"I am a triangle\n";   }
31  };
32
33  class Isosceles : public Triangle
34  {
35  public:
36      virtual const void triangle()const override
37      {
38          std::cout<<"I am an isosceles triangle\n";
39          std::cout<<"In an isosceles triangle two sides are equal\n";
40      }
41  };
42  int main()
43  {
44      std::unique_ptr<Shape> Obj[2];
45
46      Obj[0] = std::make_unique<Isosceles>();
47      Obj[1] = std::make_unique<Triangle>();
48
49      for(const auto &it: Obj)
50          it->triangle();
51
52      return 0;
53  }
54
```

Line: 54 Col: 1

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