What are Virtual Functions?

- Virtual function is a member function which is defined in the base class and can be overridden in derived class.
- It is used to achieve runtime polymorphism.
- When the function is made virtual, then C++ determines at run-time which function is to be called based on the type of the object, pointed by the base class pointer.
- Thus, by making the base class pointer to point to different objects, we can execute different versions of the virtual functions.

Example:

```
#include <iostream>
using namespace std;
class Shape {
public:
   virtual void draw() {
      cout << "Drawing a shape." << endl;
   }
};

class Circle : public Shape {
public:
   void draw() {
      cout << "Drawing a circle." << endl;
   }
};
```

```
int main() {
Shape* shape;
Shape s;
Circle c;

shape = s;
shape->draw();        // Calls Shape's draw()
shape = c;            // Calls Circle's draw()
shape-> draw();
return 0;
}
```