.NET > C#.NET > OOP

## **Inheritance**

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#### What is Inheritance

- Concept of extending the parent class, by creating child class.
- "Child class" extends "parent class".
- The child class can access members of parent class [but not reverse].
- The child class's object stores members of both child class and parent class.
- Parent class = Base Class = Super Class
- Child class = Derived class = Sub class

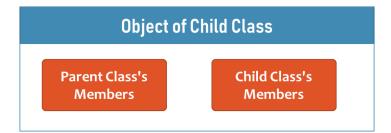
}

```
Creating Parent Class

class ParentClassName
{
    Parent Class Members here
}

Creating Child Class

class ChildClassName : ParentClassName
{
```



**Child Class Members here** 

# Types of Inheritance

### 1. Single Inheritance

One Parent Class, One Child Class.

```
class ParentClassName
{
}
class ChildClassName: ParentClassName
{
}
```

#### 2. Multi-Level Inheritance

One Parent Class, One Child Class, and the Child Class has another Child Class.

## 2. Multi-Level Inheritance

```
class ParentClassName
{
}
class ChildClass1: ParentClassName
{
}
class ChildClass2: ChildClass1
{
}
```

#### 3. Hierarchical Inheritance

One Parent Class, Multiple Child Classes.

### 3. Hierarchical Inheritance

```
class ParentClassName
{
}
class ChildClassI: ParentClassName
{
}
class ChildClass2: ParentClassName
{
}
```

## 4. Multiple Inheritance

Multiple Parent Classes, One Child Class.

## 4. Multiple Inheritance

```
class ParentClassI
{
}
class ParentClass2
{
}
class ChildClass: ParentClassI, ParentClass2
{
}
```

# 5. Hybrid Inheritance

Hierarchical Inheritance + Multi Level Inheritance

## 5. Hybrid Inheritance

```
class ParentClassName
{
}
class ChildClassI: ParentClassName
{
}
class ChildClass2: ChildClassI
{
}
class ChildClass3: ChildClassI
{
}
```