

What is inheritance?

When we construct a new class from existing class in such way that the new class access all the features and properties of existing class called inheritance.

Types:-

- Single Inheritance.
- Multiple Inheritance.
- Multilevel Inheritance.
- Hierarchical Inheritance.
- Hybrid Inheritance.

Single Inheritance

A class which contains only one base class and only one derived class, is called single inheritance.

Syntax:-

```
class base {  
    //member of base class  
}  
class derive: public/private/protected base{  
    //member of derive class  
}
```

Multi-level Inheritance

A class which contain only one base class and multiple derive class, is called multi-level inheritance.

Syntax:-

```
class base {  
    //member of base class  
}  
class derive1: public/private/protected base{  
    //member of derive1 class  
}  
class derive2: public/private/protected derive1{  
    //member of derive2 class  
}
```

Multiple Inheritance

A class which contain multiple base classes and one derive class, is called multiple inheritance.

Syntax:-

```
class base1 {  
    //member of base1 class  
}  
class base2: public/private/protected base{  
    //member of base2 class  
}  
class derive: public/private/protected base1, base2{  
    //member of derive class  
}
```

Hierarchical Inheritance

A class which contains only one base class and multiple derived classes and each derived class can access the base class, is called hierarchical inheritance.

Syntax:-

```
class base {  
    //member of base class  
}  
class derive1: public/private/protected base{  
    //member of derive1 class  
}  
class derive2: public/private/protected base{  
    //member of derive2 class  
}
```

Hybrid Inheritance

It is the combination of more than one type of inheritance, is called hybrid inheritance.

Syntax:-

```
class Mario {  
    //member of base class  
}  
class Luigi:virtual public/private/protected Mario{  
    //member of derive1 class  
}  
class Shaun:virtual public/private/protected Mario{  
    //member of derive2 class  
}  
class Peach:public Mario
```