

⊕ Base class And Derived class

→ Base class

- A base class is an existing class from which other classes are derived.
- A class from which properties are inherited.
- It cannot inherit properties and method of derived class.
- It is also known as parent class or super class.
- Syntax :-

```
class BaseClass {  
    // members.....  
    // member function  
}
```

→ Derived class

- A derived class is a class that is constructed from a base class or an existing class.
- A class from which inherited from base class.
- It can inherit properties and method of Base class.
- It is also known as child class or sub class.

• Syntax :-

```

Class Derived class
access_specifier
Base class {
    // members
    // member function
}

```

Access Modifiers

- Access modifiers are used to implement an important aspect of Object-Oriented Programming known as Data Hiding.
- There are 3 types of access modifiers.

→ Private

- If the mode of access specifier is private then it can only be accessible for class & friend function.
- It can't be inherited.
- It provides high security for its data members.
- Members cannot be accessed from outside the class.

→ Protected

- If the mode of access specifier is protected then it can be accessible for class itself.
- It is inherited by derived class.

- It provides less security.

- Members cannot be accessed from outside the class.

→ Public

- If the mode of access specifier is public then we can access the public member within the class and outside the class.

- Public member is inherited for derived class.

- It does not provide any security.

- Members are accessible from outside the class.

Exception Handling

- Exception handling is a mechanism that separates code that detects and handles exceptional circumstances from the rest of your program.

- We use exception handling to check error conditions that might occur at run time even if your code is correct.

- Exception handling in C++ consists of three keywords:-

→ try

→ throw

→ catch

• try and catch keyword occurs in pairs.

④ Binding Data

- identifiers \rightarrow into \rightarrow address.

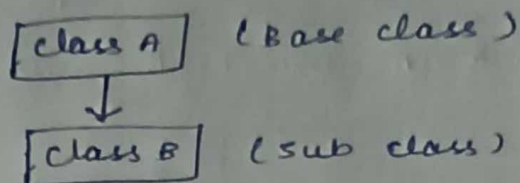
Page No.	
Date	

- The try statement allow you to define a blocks of code to be tested for error while it is being executed.
- The throw keyword throws an exception when a problem is detected, which let us create a custom error.
- The catch statement allow you to define a block of code to be executed, if an error occur in the try block.

Types of Inheritance

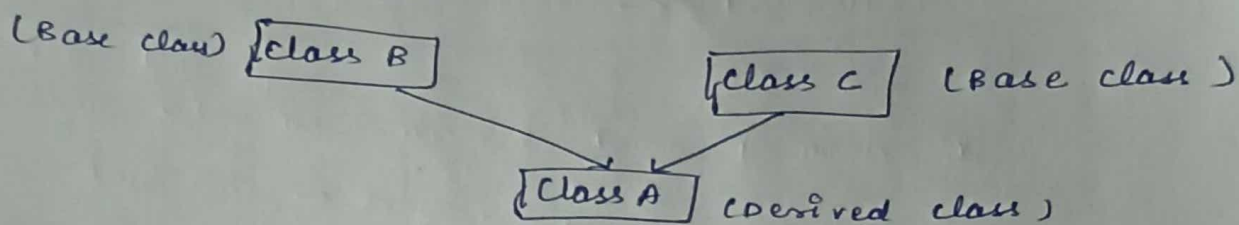
→ Single Inheritance

A class is allowed to inherit from only one class that is one subclass is inherited by one base class only.



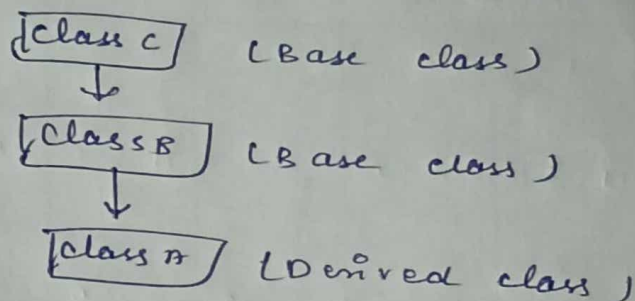
→ Multiple Inheritance

A class is inherit from more than one class that is one subclass is inherited from more than one base class.



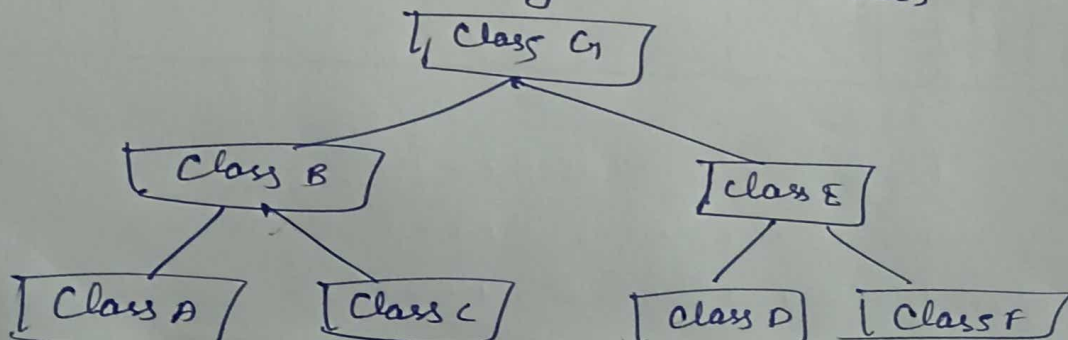
→ Multilevel Inheritance

A derived class is created from another derived class.



→ Hierarchical Inheritance

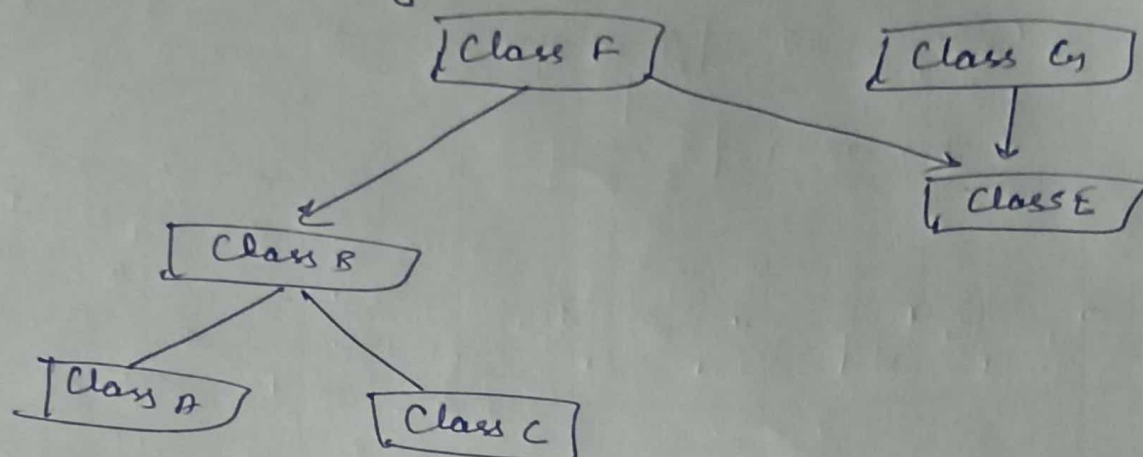
In this type of inheritance, more than one subclass is inherited from a single base class that is more than one sub class class is created from a single base class.



→ Hybrid Inheritance

It is the combination of more than one type of inheritance.

Ex - Combining hierarchical and multiple inheritance.



⑧ Exception handling

• Exception handling is a mechanism that separates code that detects and handles the exceptional circumstance from the rest of your program.

• We use exception handling to check error conditions that might occur at runtime even if code is correct.

• Exception handling in C++ consists of 3 keywords:-

→ Try - The try statement allows you to define a block of statements to be tested for errors while it is being executed.

→ Throw - The throw statement ~~throws~~ throws an exception when a problem is detected.