SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107
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Department of Information Technology

19CS204 OBJECT ORIENTED PROGRAMMING

I YEAR /II SEMESTER

Topic - Inheritance

Inheritance

- Inheritance defined as one class acquires the properties (methods and fields) of another class.
- Using inheritance, you can create a general class that defines traits common to a set of related items.
- Inheritance allows the properties of one class to be inherited by other class.
- A class that is inherited is called a superclass.
- The class that does the inheriting is called a subclass.
- Therefore, a subclass is a specialized version of a superclass. It inherits all of the members defined by the superclass and adds its own, unique elements.

Inheritance

Superclass

The class whose features are inherited is called as super class. It is also called as base class or parent class.

Subclass

The class which inherits the features of other class is known as subclass or derived class or child class.

Inheritance supports code reusability. We can reuse the methods and fields of existing class when you create a new class.

Extends is the keyword used to inherit the properties of a class.

Inheritance

Syntax

```
class super
{
……..
}

class sub extends super
{
….
}
```

Inheritance

Example

```
class A {
int i, j;
void showij() {
System.out.println("i and j: " + i + " " + j);
}
}
// Create a subclass by extending class A.
class B extends A {
int k;
void showk() {
System.out.println("k: " + k);
}
void sum() {
System.out.println("i+j+k: " + (i+j+k));
}
}
```

```
class SimpleInheritance {
public static void main(String args []) {
A superOb = new A();
B subOb = new B();
// The superclass may be used by itself.
superOb.i = 10;
superOb.j = 20;
System.out.println("Contents of superOb: ");
superOb.showij();
System.out.println();
/* The subclass has access to all public members of
its superclass. */
subOb.i = 7;
subOb.j = 8;
subOb.k = 9;
System.out.println("Contents of subOb: ");
subOb.showij();
subOb.showk();
System.out.println();
System.out.println("Sum of i, j and k in subOb:");
subOb.sum();
}
}
```

Inheritance

The output from this program is shown here:

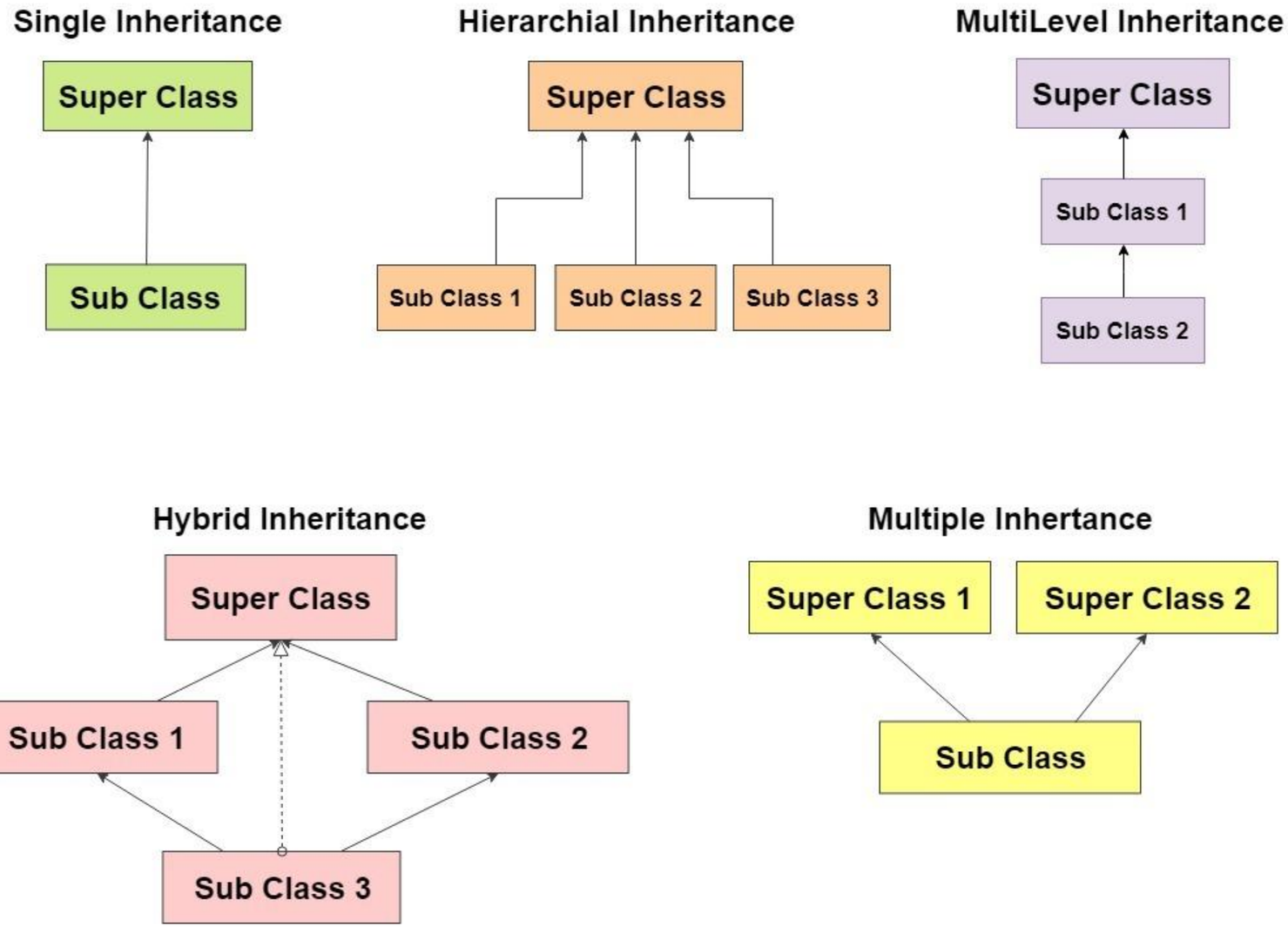
```
Contents of superOb:
i and j: 10 20

Contents of subOb:
i and j: 7 8
k: 9

Sum of i, j and k in subOb:
i+j+k: 24
```

Inheritance – Member Access

```
class A {
int i; // public by default
private int j; // private to A
void setij(int x, int y) {
i = x;
j = y;
}
}
// A's j is not accessible here.
class B extends A {
int total;
void sum() {
total = i + j; // ERROR, j is not accessible here
}
}
```

```
class Access {
public static void main(String args[]) {
B subOb = new B();
subOb.setij(10, 12);
subOb.sum();
System.out.println("Total is " + subOb.total);
}
}
```

Inheritance – Types



THANK YOU