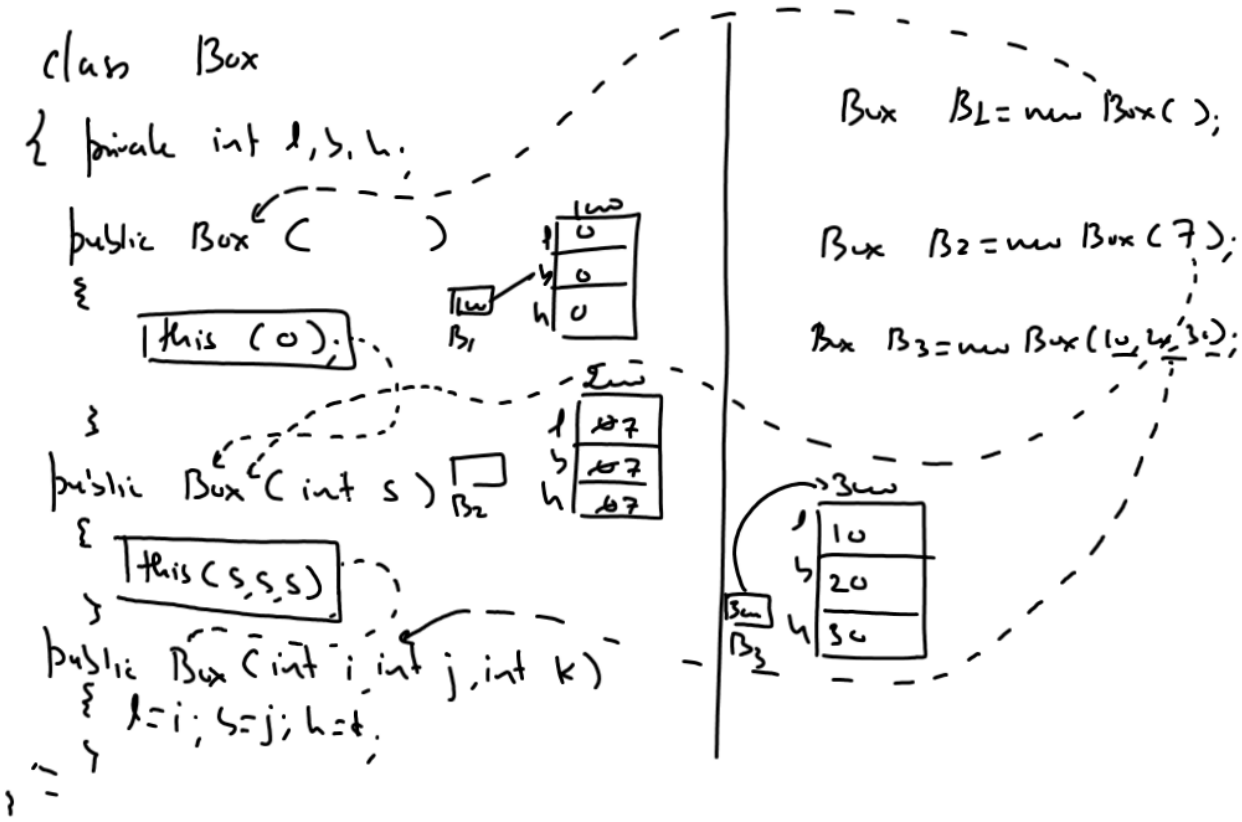
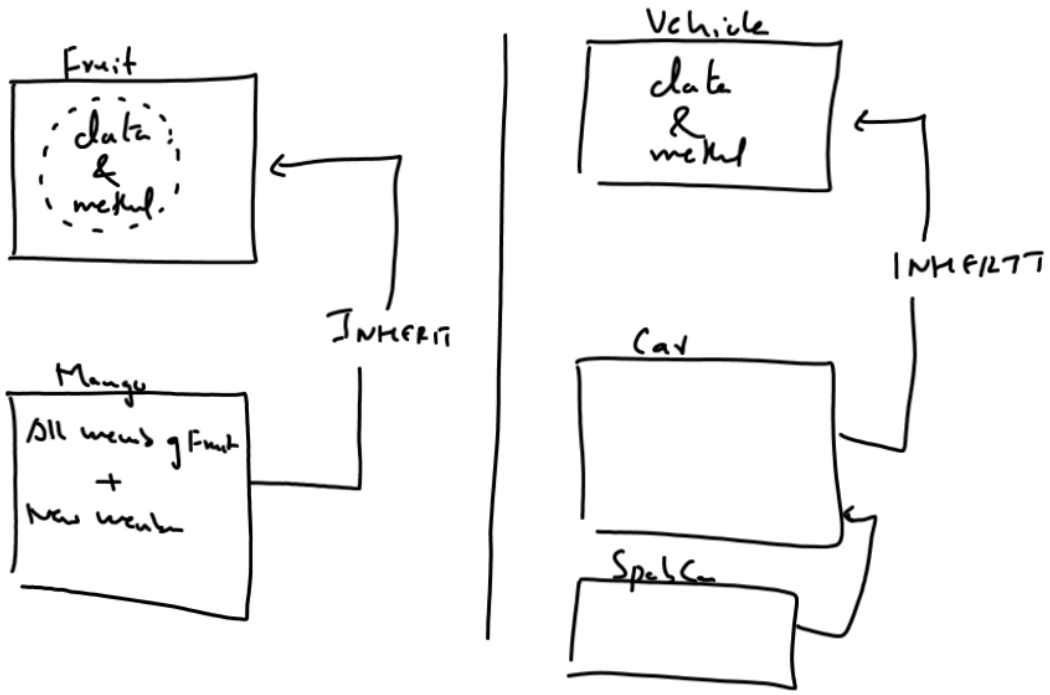


INHERITANCE



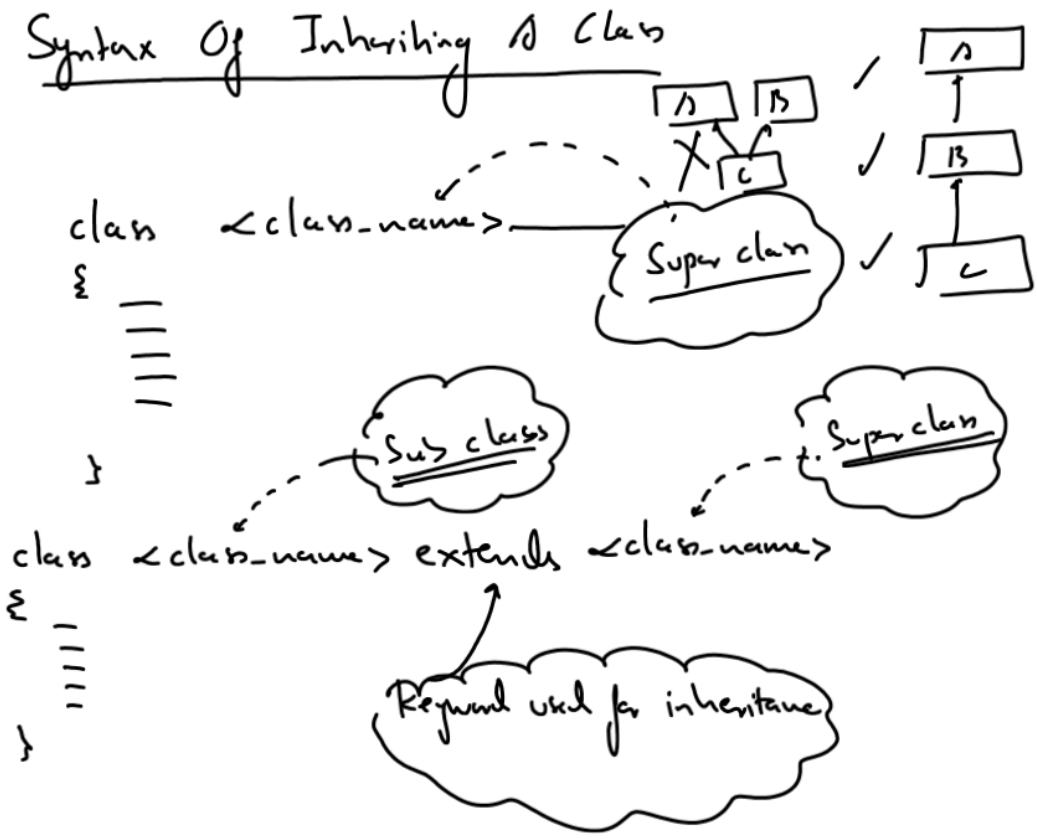
What is inheritance?
==========
Inheritance is one of the core principles of Object Oriented Programming. As the name indicates to inherit means to acquire features of an existing entity in a newly created entity. Just like a child inherits the features of his/her parents.

Similarly, if while designing a class in Java, a programmer wants then he can use the features (Instance variables and Methods) of an existing class into his own class. But to do this the programmer will have to apply the concept of INHERITANCE. In Java, the class will gets inherited is called as **SUPER CLASS** and the class which inherits is called as **SUB CLASS**. Thus via inheritance members of super clas can also be accessed through the object of sub class.

Benefits of Inheritance
==========

1. The major benefit of applying inheritance is **code reusability.** This is because the sub class programmer is not required to redesign those methods or data again which already have been provided by the super class. This saves lot of time and effort on the part of sub class programmer.

2. Another benefit of inheritance is **maintainability.** This is because if we have apply inheritance and we want to add a new common feature to all the classes.



Types Of Inheritance In OOPs

1. Single Inheritance

2. Multiple Inheritance

3. Multilevel Inheritance

4. Hierarchial Inheritance

5. Hybrid

But , Java supports only 3 types of INHERITANCE:

1. Single
2. Multilevel Inheritance
3. Hierarchial Ineritance

Java strongly opposes MULTIPLE and HYBRID INHERITANCE

Why Java does not support Multiple or Hybrid Inheritance?
==========

Multiple/Hybrid Inheritance allows features of two different classes to be inherited in the 3rd class. Due to this ambiguity can arrise if both the parent classes contain methods with same prototype. The designers of Java language wanted to keep Java as simple as possible and so to avoid ambiguity problem they decided not to support multiple/hybrid inheritance.

Although, to a certain extend Java provides multiple inheritance support using another feature called **INTERFACE**.

```
package inhdemo;
public class Emp {
   private String name;
   private double salary;

   public void setData(String name,double salary){
      this.name=name;
      this.salary=salary;
   }

   public String getName() {
      return name;
   }

   public double getSalary() {
      return salary;
   }
}
```

```
public class Manager extends Emp{
   private double bonus;

   public void setBonus(double bonus) {
      this.bonus = bonus;
   }
   public double getTotalIncome(){
      double income;
      income=getSalary()+bonus;
      return income;

   }
}
```

```
package inhdemo;
public class UseManager {
   public static void main(String[] args) {
      Manager boss=new Manager();
      boss.setData("Ashish",50000.0);
      boss.setBonus(25000.0);
      System.out.println("Manager's name:"+boss.getName());
      System.out.println("Manager's income:"+boss.getTotalIncome());

   }
}
```