

# Java for beginners

## Inheritance

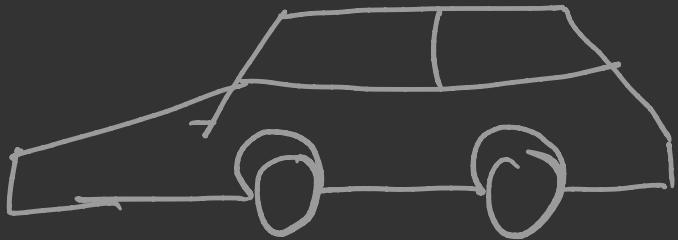


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# Agenda

- ① Preface for Inheritance
- ② Inheritance
- ③ Syntax
- ④ Benefits
- ⑤ Is - A relationship
- ⑥ Member accessibility
- ⑦ Types of Inheritance
- ⑧ Example

# Object is a real world entity



price	setPrice()
engine	changePrice()
capacity	=
fuel type	=
:	=
:	=
:	=

```
class Car
{
    =
    =
    =
    =
    =
}
```

# Class SportsCar {



Price

Engine

Capacity

Fuel type

evacuation Status

Tyre Pressure

Service Status

setPrice()

changePrice()

activeAlarm()

serviceBeep()

fireAlarm()

-

-

-

}

## Inheritance

Inheritance is a mechanism in Java by which one class is allowed to inherit the features (fields and methods) of another class.

Object oriented programming allows classes to inherit commonly used state and behaviour from other classes.

## Syntax of inheritance in C++

```
class Child : public Parent  
{
```

y<sub>j</sub>

## Syntax

class SubClass extends SuperClass {

  |  
  |

}

extends is a keyword

Base class = SuperClass = ParentClass

Derived Class = Subclass = Child class

In Java, each class is allowed to have one direct super class, and each superclass has the potential for any number of sub classes.

## Benefits of Inheritance

- Code reusability
- Abstraction
- updation in methods
- Easy modification

# IS-A relationship

Sub Category  
Specialized

Category  
Generalized

Banana is a Fruit

SportsCar is a Car

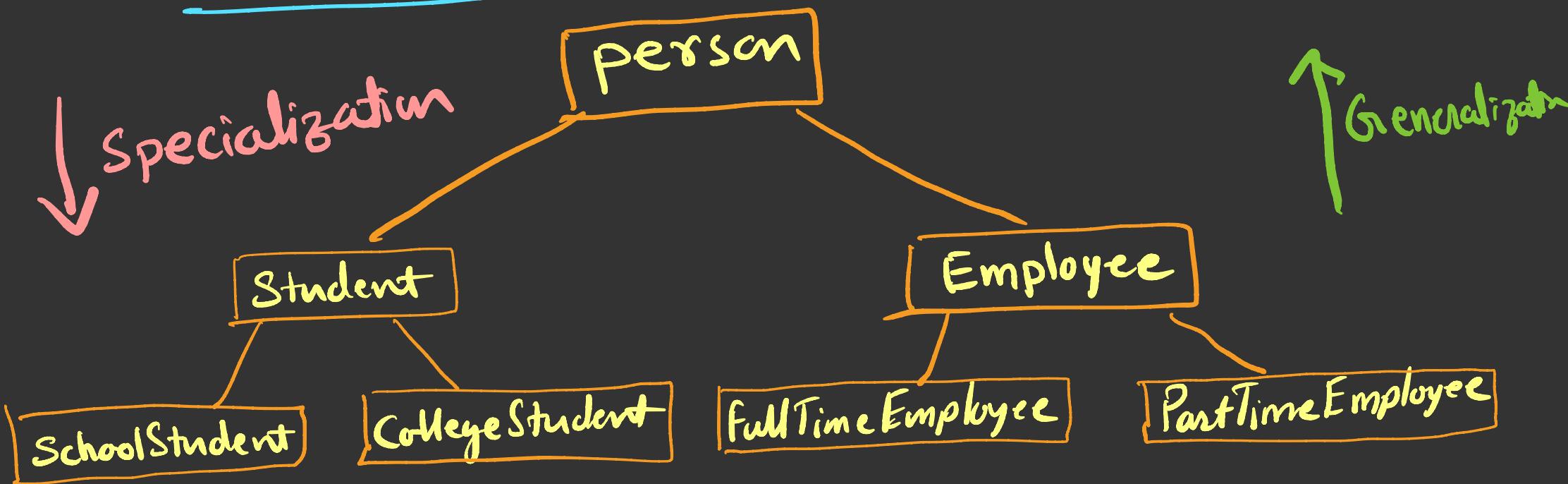
Rectangle is a Quadrilateral

Employee is a Person

Student is a Person

# Generalization

## Hierarchical Relationship



## Member Accessibility Rules

- Sub class can access public and protected members of superclass.
- Sub class can also access default members if it is in the same package as of superclass.

## Types of Inheritance

- ① Single or Simple Inheritance
- ② Multilevel Inheritance
- ③ Hierarchical Inheritance

No concept of multiple Inheritance.

- Define a class Person with appropriate members.
- Define a subclass Employee of Person with appropriate members.