Java – OOP - Classes and Objects

Presented by

Sagar
Java Consultant

OOP

- OOP stands for **Object-Oriented Programming**.
- Procedural programming is about writing procedures or methods that perform operations on the data.
- OOP is about creating objects that contain both data and methods.
- **Object = State (form) + Behavior (function)**

Classes

- Classes are building blocks of a Java application
- Java apps are built using one or more classes
- A class contains data and application business logic
- Data are represented as variables in a class
- App business logic is implemented as methods in class

Class and Object

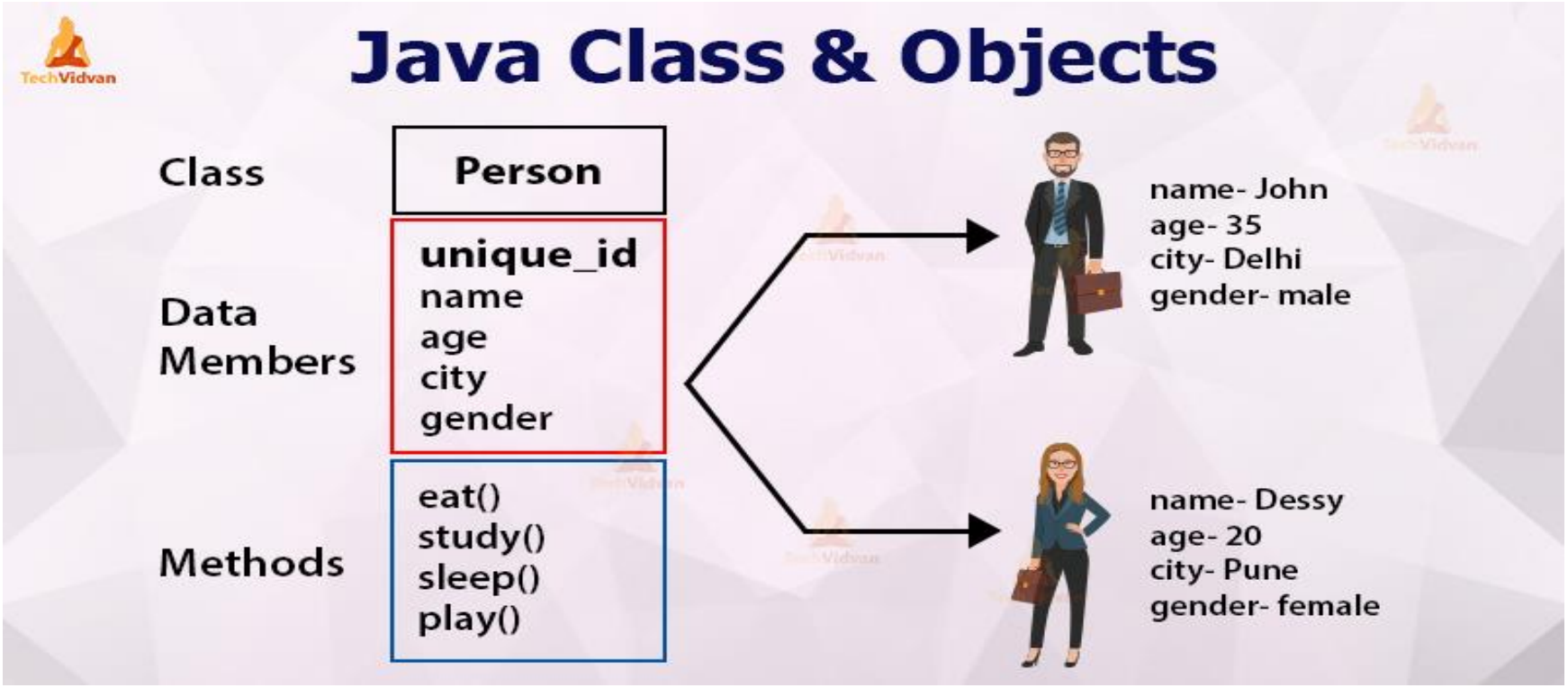
- A class is like a blueprint / design element

- Objects are like the things made from the blueprint.
  - Ex: Employee – class, you – object
  - BankAccount – class, your bank account – object
  - Book – class, book you read - object
- A single .java file have classes

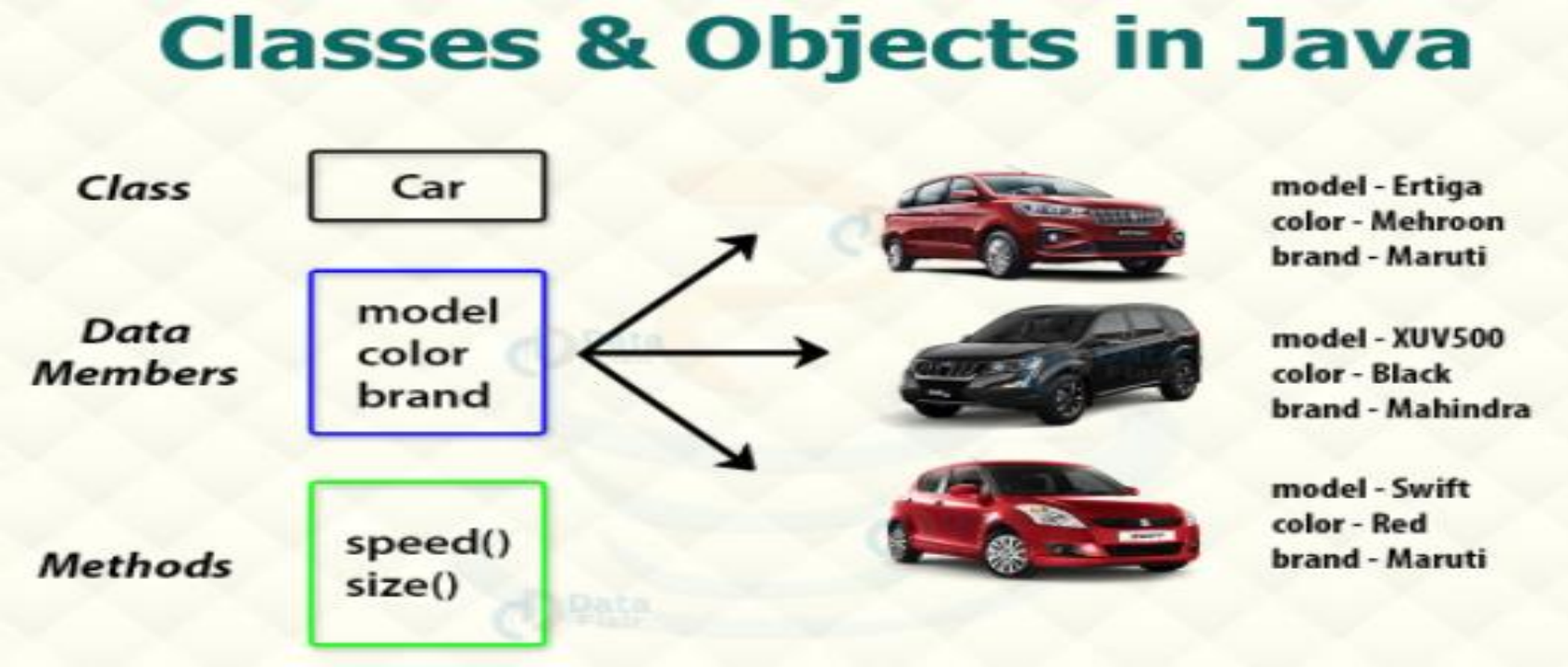
- Java class name and .java file name must be same

- There can not be 2 / more classes defined in the same .java file

Classes and Objects



Classes and objects …



Objects

- An object has:
  - –state - descriptive characteristics
  - –behaviors - what it can do
- The state of a bank account includes its account number and its current balance
- The behaviors associated with a bank account include the ability to make deposits and withdrawals
- Note that the behavior of an object might change its state
  - (update on balance)

State and Behavior

State

balance

engine,wheels,fuel capacity

Behavior

deposit and withdraw

move, rotate

Example

```
public class Bicycle {

        // state or field
        private int gear = 5;

        // behavior or method
        public void braking() {
                System.out.println("Working of Braking");
        }

}
```