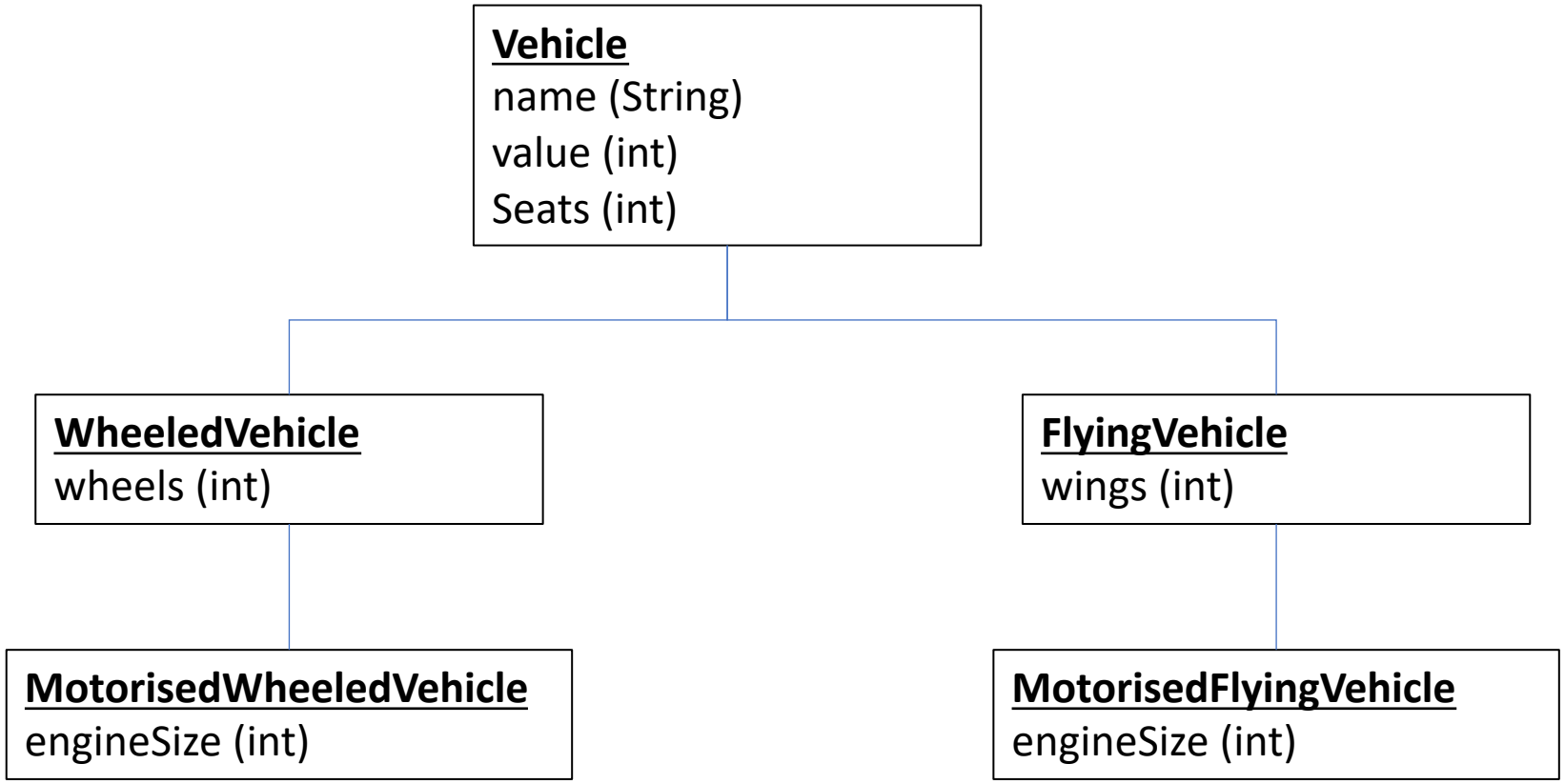
CT874/5177

Week 7 Assignment– Class Hierarchies



Week 7 Assignment– Class Hierarchies

- Your assignment is to write a Vehicle class with the properties shown on the previous slide, along with a constructor and a public method called Print()
- Then extend this class to create WheeledVehicle and FlyingVehicle
- And extend WheeledVehicle to create MotorisedWheeledVehicle
- And extend FlyingVehicle to create MotorisedFlyingVehicle
- Each of these subclasses has its own constructor, and defines its own version of Print()
- Please test your classes with the Tester() class shown on the next slide, and output should be as shown on the final slide

Tester Class

```
public class Tester {

  public static void main(String[] args) {
    Vehicle[] v = new Vehicle[5];

    v[0] = new Vehicle("Rowboat", 500, 4);
    v[1] = new WheeledVehicle("Skateboard", 100, 0, 4);
    v[2] = new MotorisedWheeledVehicle("Car", 10000, 5, 4, 1200);
    v[3] = new FlyingVehicle("Balloon", 5000, 2, 0);
    v[4] = new MotorisedFlyingVehicle("Airplane", 500000, 20, 2, 6000);

    for (int i=0; i<v.length; i++) {
      System.out.printf("Number %d is a ", i);
      v[i].Print();
    }
  }

}
```

Required output when the program runs

```
Number 0 is a Vehicle: name Rowboat, value $500, with 4 seats.
Number 1 is a WheeledVehicle: name Skateboard, value $100, with 0 seats and 4 wheels.
Number 2 is a MotorisedWheeledVehicle: name Car, value $10000, with 5 seats and 4 wheels and engine size 1200.
Number 3 is a FlyingVehicle: name Balloon, value $5000, with 2 seats and 0 wings.
Number 4 is a MotorisedFlyingVehicle: name Airplane, value $500000, with 20 seats and 2 wings and engine size 6000.
```