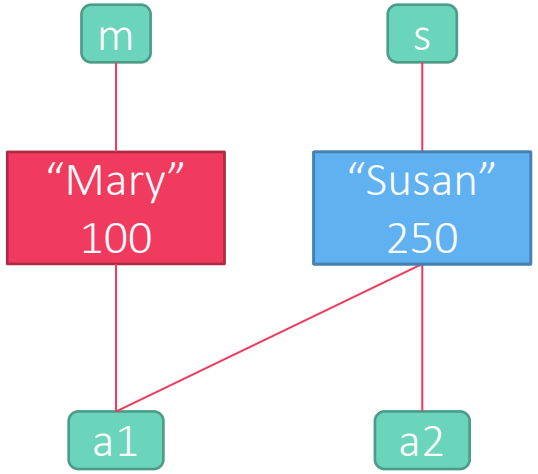
While you wait …

```
public class BankAccount {

    private int balance;
    private String name;

    public BankAccount(String name, int initialAmount) {
        this.name = name;
        this.balance = initialAmount;
     }

    public String getName() { return this.name; }
    public int getBalance() { return this.balance; }

    public void deposit(int value) { balance += value; }
    public void withdraw(int value) { balance -= value; }

 }
```

```
void mystery (BankAccount a1, BankAccount a2) {
  a1 = a2;
  a1.deposit (100);
  a2.withdraw (50);
}
BankAccount m = new BankAccount("Mary", 100);
BankAccount s = new BankAccount("Susan", 200);
mystery (m, s);
// What is m.balance? What is s.balance? Is m == s now?
```

Objects and reference semantics

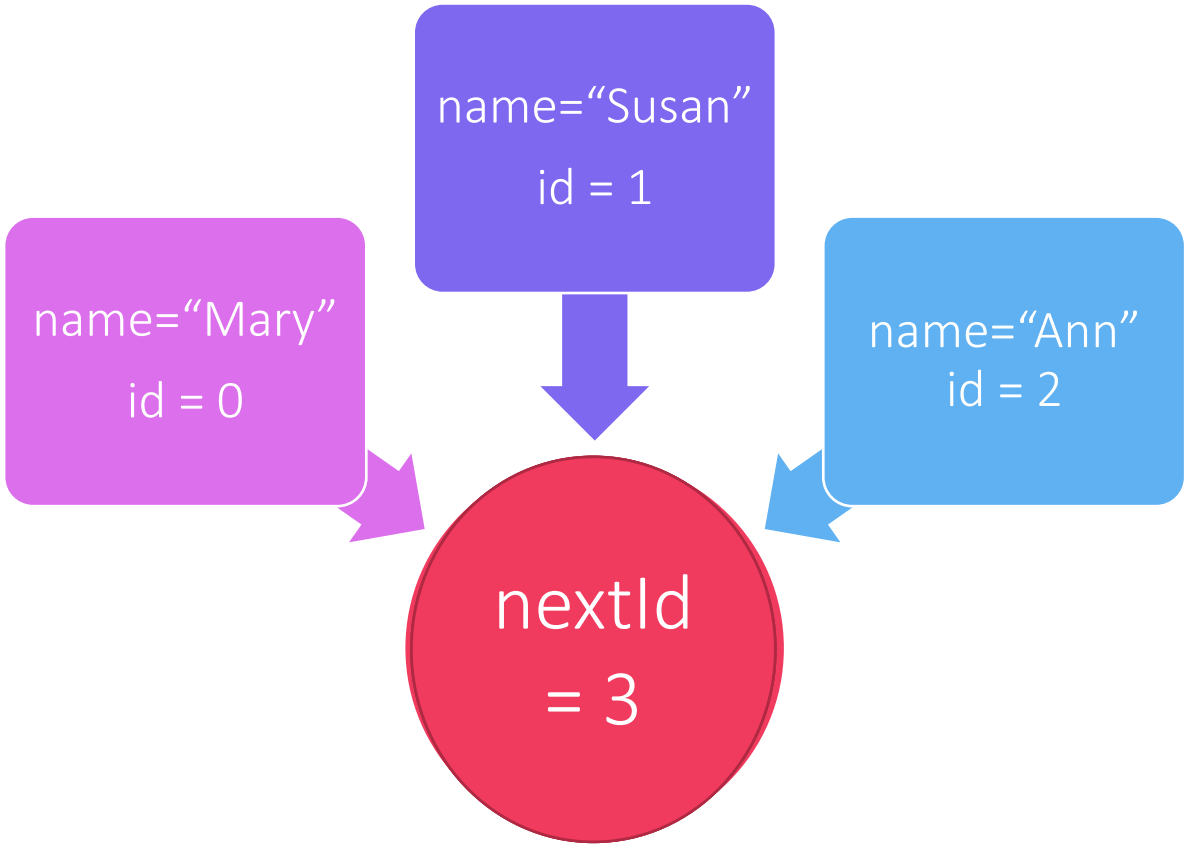


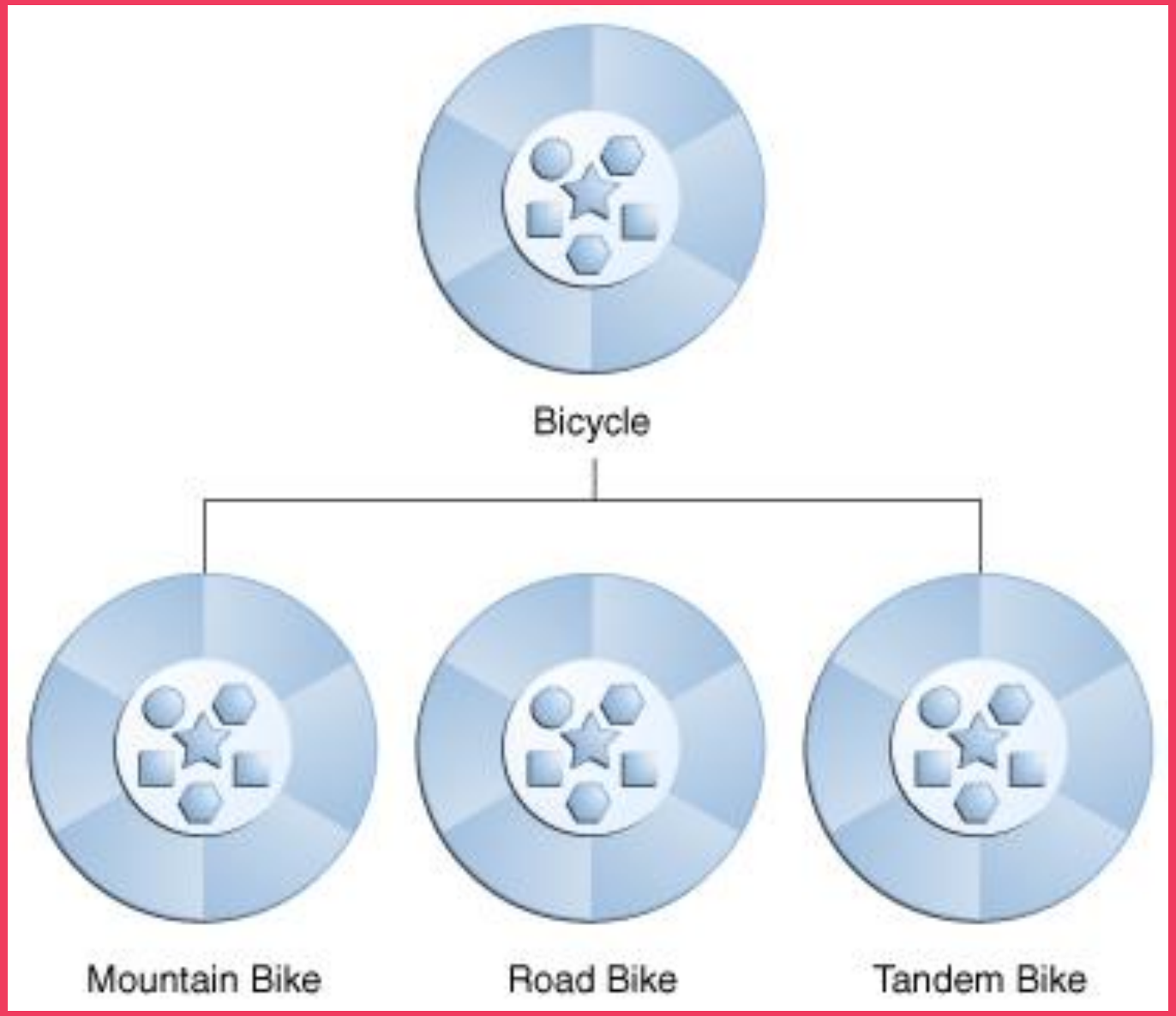

```
void mystery (BankAccount a1, BankAccount a2) {
  a1 = a2;
  a1.deposit (100);
  a2.withdraw (50);
}
BankAccount m = new BankAccount(“Mary”, 100);
BankAccount s = new BankAccount(“Susan”, 200);
mystery (m, s);
```

Bank account class again – added ID field

```
public class BankAccount {

  private int balance;
  private String name;
  private int id;

  private static int NEXT_ID = 0;

  public BankAccount(String name, int initialAmount) {

    this.name = name;
    this.balance = initialAmount;
    this.id = BankAccount.NEXT_ID++;

  }
}
```

Static and instance fields in BankAccount





https://docs.oracle.com/javase/tutorial/java/concepts/inheritance.html

Inheritance

Inheritance example

```
public class Animal {

    protected String name;

    public Animal(String name) {
        this.name = name;
    }

    public void move() {

        System.out.println(name
              +  " can move");

    }

    public String getName() {

        return this.name;

    }
}
```

```
public class Dog extends Animal {

    private String breed;

    public Dog(String name, String breed) {
        super(name);
        this.breed = breed;
    }

    public void move() {

        System.out.println(name
            + " can walk and run");

    }

    public void bark() {

        System.out.println("woof");

    }
}
```