CSCI 132:
Basic Data Structures and Algorithms

Lecture 7: OOP References + Inheritance

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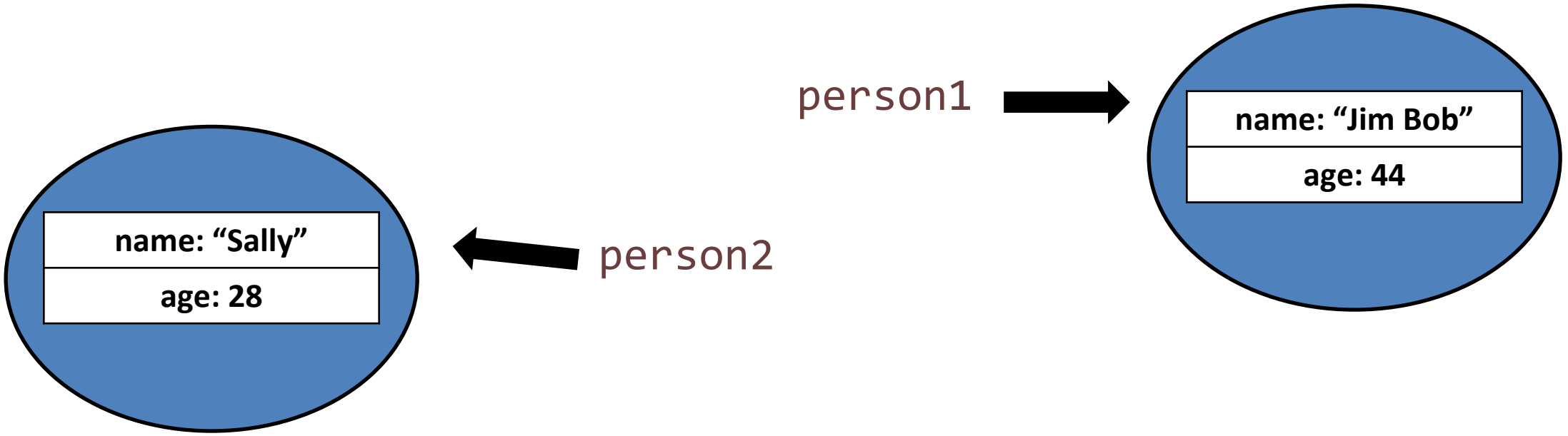
Announcements

- Program 1 posted, due 2/12 @ 11:59 PM

```
public class ReferencesDemo {
        public static void main(String[] args) {

                Person person1 = new Person("Jim Bob", 44);
                Person person2 = new Person("Sally", 28);
        }
}
```

`person1` and `person2` are **references** to a Person object

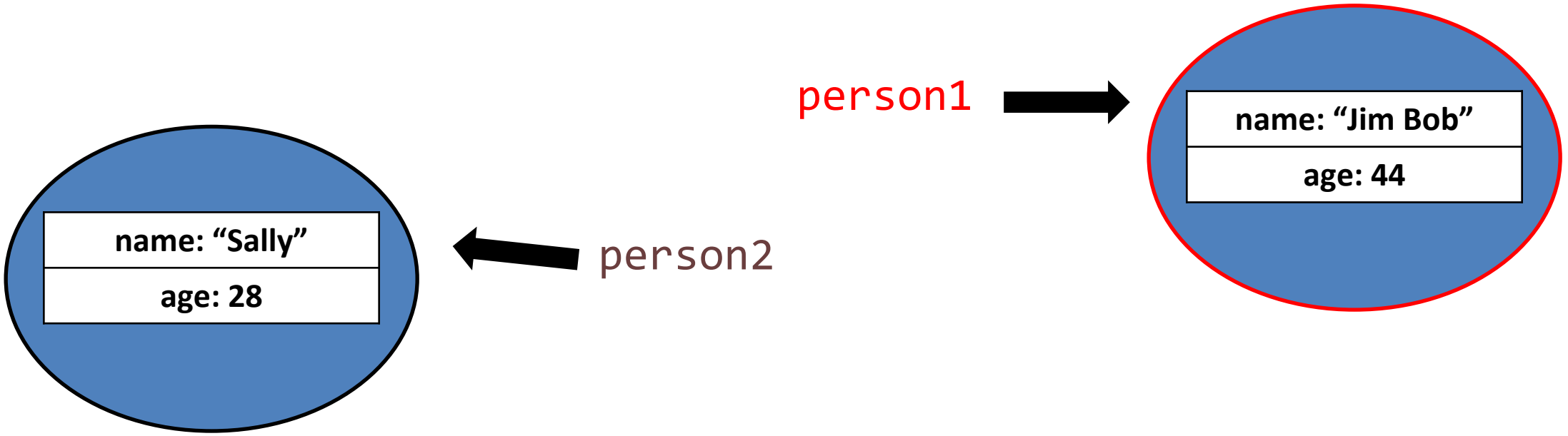


```
public class ReferencesDemo {
        public static void main(String[] args) {

                Person person1 = new Person("Jim Bob", 44);
                Person person2 = new Person("Sally", 28);
                person1.changeName("Jack");

        }
}
```

`person1` and `person2` are **references** to a Person object



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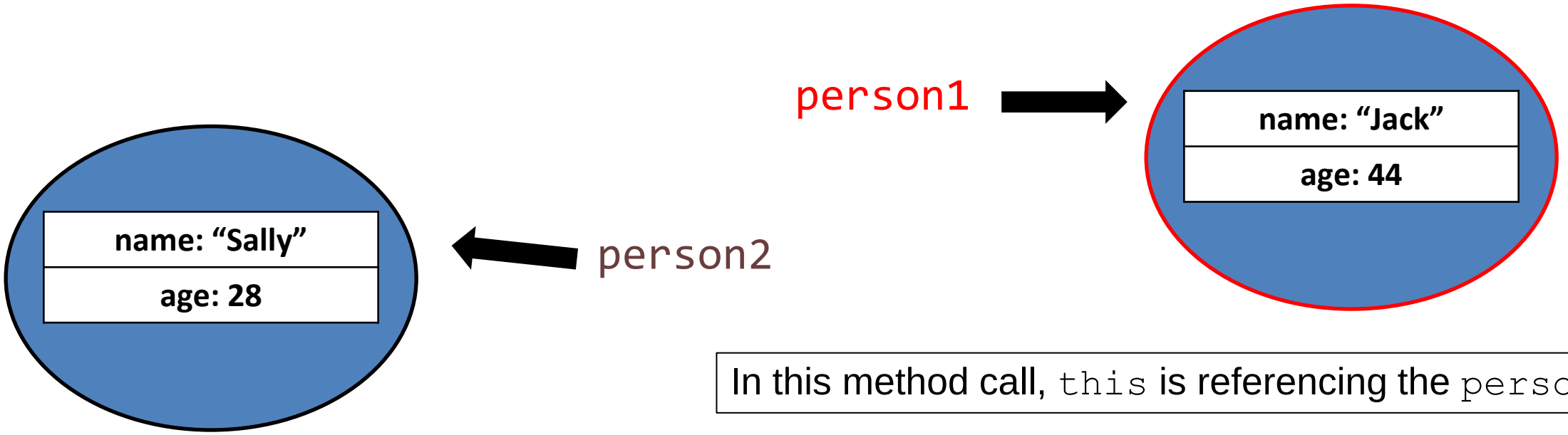
public class ReferencesDemo {
        public static void main(String[] args) {

                Person person1 = new Person("Jim Bob", 44);
                Person person2 = new Person("Sally", 28);
                person1.changeName("Jack");

        }
}
```

```
public void changeName(String newName) {
    this.name = newName;
}
```

`person1` and `person2` are **references** to a Person object



In this method call, `this` is referencing the `person1` object

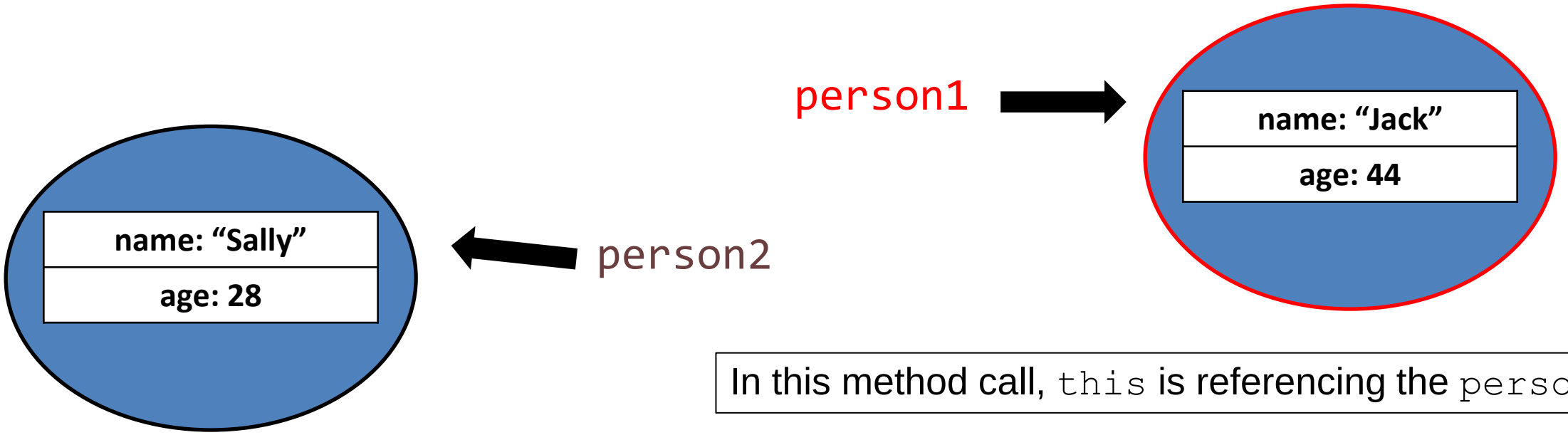
```java
public class ReferencesDemo {
	public static void main(String[] args) {

		Person person1 = new Person("Jim Bob", 44);
		Person person2 = new Person("Sally", 28);

		Person person3 = person1;
	}
}
```

```java
public void changeName(String newName) {
    this.name = newName;
}
```

Suppose we create a new reference variable and link it to an existing object



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public class ReferencesDemo {
        public static void main(String[] args) {

                Person person1 = new Person("Jim Bob", 44);
                Person person2 = new Person("Sally", 28);

                Person person3 = person1;
        }
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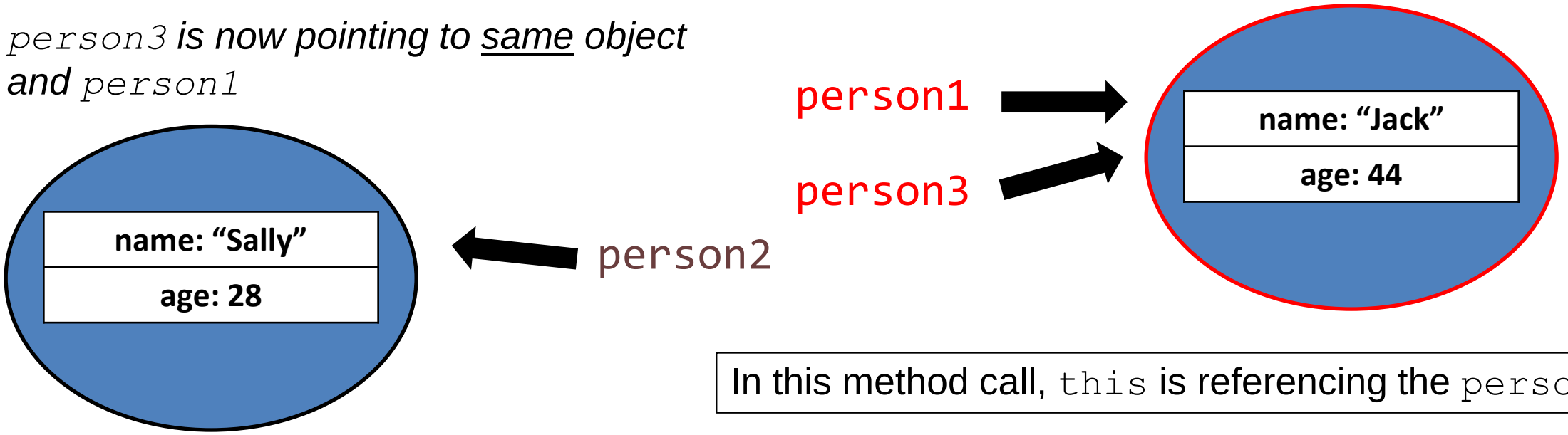
```

```
public void changeName(String newName) {
    this.name = newName;
}
```

Suppose we create a new reference variable and link it to an existing object

`person3` is now pointing to <u>same</u> object and `person1`



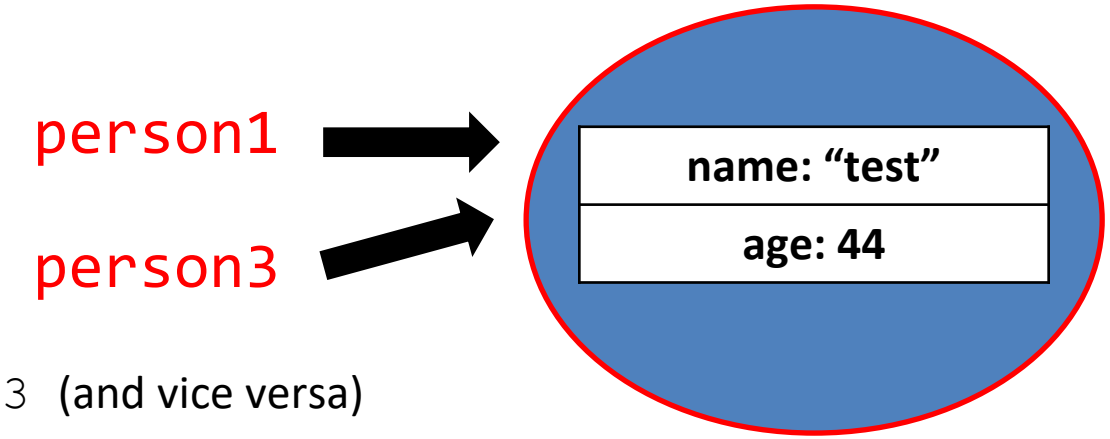
In this method call, `this` is referencing the `person1` object

```java
public class ReferencesDemo {
        public static void main(String[] args) {

                Person person1 = new Person("Jim Bob", 44);
                Person person2 = new Person("Sally", 28);

                Person person3 = person1;
                person1.changeName("test");
        }
}
```

```java
public void changeName(String newName) {
    this.name = newName;
}
```

Suppose we create a new reference variable and link it to an existing object

`person3` is now pointing to <u>same</u> object and `person1`



Any changes to `person1` will also update `person3` (and vice versa)

```
System.out.println(person1.getName())   → “test”
System.out.println(person3.getName())   → “test”
```