Tutorial 7

> **Comment**
>
> Tutorial exercises should be done without a computer

> **Note**
>
> Please note that the class, method, and variable names used throughout this tutorial are **not compliant with the style guide** and should not be used as an example for your own code.

1 Inheritance

Suppose classes have the following inheritance relationships: D extends B, E extends B, F extends C, B extends A, C extends A.

Suppose that objects are created such that:

- `A a = new A();`

- `B b = new B();`

- ...

and `A x = new D();`

What is the result of the following:

1. `d instanceof B`

2. `f instanceof A`

3. `a instanceof C`

4. `x instanceof B`

2 Polymorphism and Method Resolution

Consider the following classes:

```java
public class A {
    public int foo(Object o) {
        return 1;
    }

    public int foo(A a) {
        return 2;
    }
}

public class B extends A {
```

```
    public int foo(A a) {
        return 3;
    }

    public int foo(B b) {
        return 4;
    }
}
```

Suppose that the following objects are created:

```
Object o = new A();
A a1 = new A();
A a2 = new B();
B b = new B();
```

What would be returned by the following method calls?[1]

1. a1.foo(o);

2. a2.foo(a1);

3. a2.foo(o);

4. a2.foo(b);

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[1]You may find https://docs.oracle.com/javase/specs/jls/se13/html/jls-8.html#jls-8.4.9 helpful for this.