# Polymorphism

# Poly + Morphism ( Many Forms)

- Polymorphism is the ability of the object to take on many forms

- Polymorphism is when reference type is a parent class/interface and object type is child.

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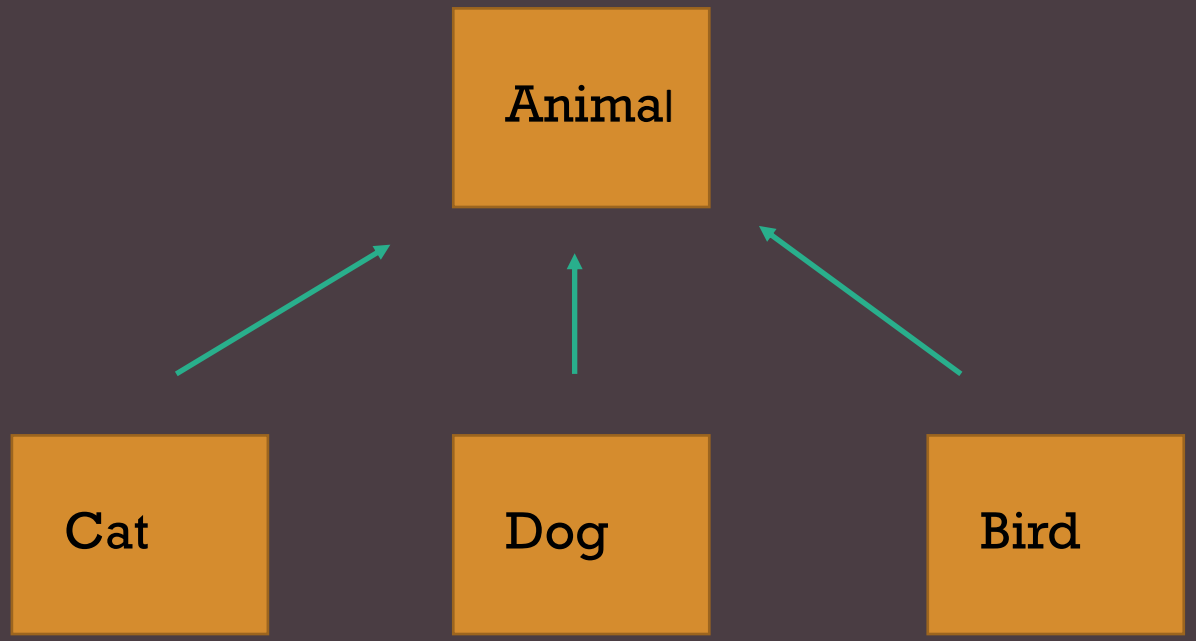


| Reference Type | | Object Type |
|---|---|---|
| Animal a | = | new Animal(); |
| Animal a | = | new Dog(); |
| Animal a | = | new Bird(); |

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```java
public interface MyInterface{}

public class ClassA implements MyInterface{}

public class ClassB implements MyInterface{}

ClassA a = new ClassA();
ClassB b = new ClassB();

MyInterface a = new ClassA();
MyInterface b = new ClassB();
```

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# Calling method in polymorphism

- When we call a method, it will call overridden version from a child class, if we have overridden the method.

- If method is not overridden, it will call parent/super class version.

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# Instanceof keyword

- instanceof operator can be used to check if the object is certain class.

```
Animal a = new Dog();

if(a instanceof Dog){

    System.out.println("it is Dog")
}else{
    System.out.println("it is not Dog")
}
```

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# Rules

- Reference type can be parent or interface , object can be any extending or implementing child class

- Reference type decides what is accessible

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