

Polymorphism

1. What does the *word* 'polymorphism' mean?

A many forms

2. What does it mean when we apply polymorphism to OO design? Give a simple Java example.

using a grouping set to assign a number of objects can interact with the same class using the same method

Example:

An instance of a person class has a method to wear (add to an ArrayList) objects that implement the clothes interface.

Objects that implement the clothes interface include:

Shirt
Shoes
Gloves
Dungarees

These objects can be added to the ArrayList in the perso class but the object :Tractor cannot.

3. What can we use to implement polymorphism in Java?

Interfaces, Inheritance, abstract classes

4. How many 'forms' can an object take when using polymorphism?

As many as we set

5. Give an example of when you could use polymorphism.

a fairground ride object has methods that can only be used by person objects who have a height property of 4' or larger

Composition

1. What do we mean by 'composition' in reference to object-oriented programming?

Objects using other objects for their properties and methods in order to save writing more code and repeating yourself.

2. When would you use composition? Provide a simple example in Java.

When you need to create an object that relies on the states of other objects to instantiate.

3. What is/are the advantage(s) of using composition?

We can use it to create objects that are amalgams of the properties or methods of several other objects without using multiple inheritance.

4. What happens to the behaviours when the object composed of them is destroyed?

They are also destroyed.