



CS260: Object Oriented Programming

Inheritance? - February 9, 2017



Overview

- Quiz next time...
 - UML Class Diagrams
 - Arrays, ArrayLists
 - Inheritance
-

Quiz next Thursday...

1. What is an Object?
 - a. Related variables and functions, encapsulated in a single type
2. What are the two parts of an Object?
 - a. State
 - b. Behavior
3. What is a Class
 - a. A blueprint for creating Objects

Quiz next Thursday...

4. What is a method?
 - a. A class function
5. What is a field?
 - a. A class variable
6. What is a constructor?
 - a. A function with the same name as it's containing class that creates and sets up Objects

Quiz next Thursday...

7. Classes

- a. What does a class declaration look like?

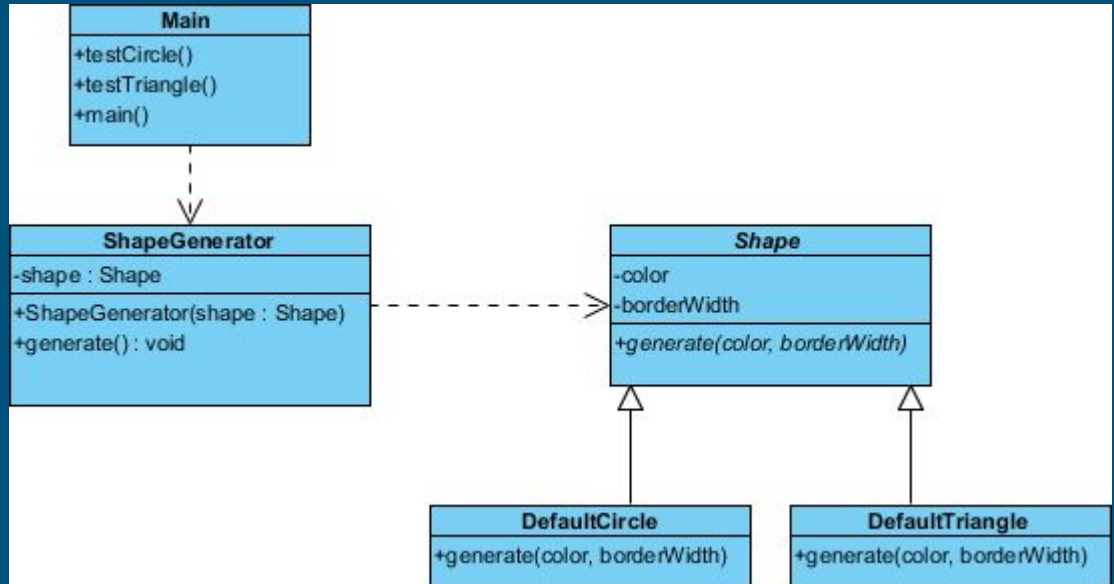
```
public class ClassNameHere {  
    //this is where fields go  
    ClassNameHere(){  
        //this is where we set up the class  
    }  
    //this is where methods go  
}
```

UML

- Unified Modelling Language
 - Developed 1994 - 1995
 - Grady Booch, Ivar Jacobson, James Rumbaugh
 - Standard software notations
- Diagrams
 - Class Diagram
 - Object Diagram
 - Use Case Diagram
- Wikipedia Link - https://en.wikipedia.org/wiki/Unified_Modeling_Language

UML Class Diagrams

- Class Name
- State - Fields
- Behavior - Methods



UML Class Diagram Example

Array, ArrayList



OOP - Inheritance

- What is inheritance?
 - A way of deriving specific Classes from other, more general Classes
 - Allows you to reuse code from a more general Class
- What does inheritance look like?
 - Standard Class declaration but with “extends” keyword

```
public class ChildClass extends ParentClass {  
    //this is where fields go  
    ChildClass(){  
        //this is where we set up the class  
    }  
    //this is where methods go  
}
```

Inheritance Example

On your own... (not homework)

- Look at:
 - Inheritance on official Java Docs - <https://docs.oracle.com/javase/tutorial/java/land/subclasses.html>