CS260: Object Oriented Programming

Inheritance - January 26, 2016

Overview

- Quiz next time…

- UML Class Diagrams

- Inheritance

- hw2 Questions

  - Super extra credit example?

Quiz next time…

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 time…

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 time...

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
}
```
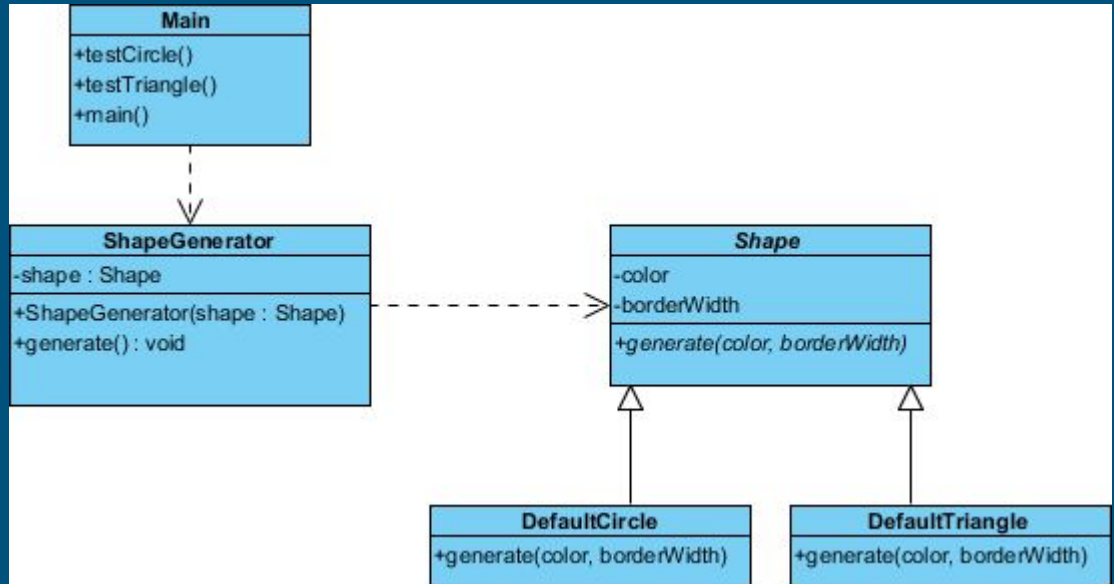
UML

- 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

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

```java
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/IandI/subclasses.html