Lesson Plan

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Lesson:

__Lesson 2 Ch 1: 1.3-1.5 & Ch 2: 2.1-2.6__

Timeframe:

_____75 minutes in class_____

Materials needed:

Students need:
- Textbook
- Eclipse installed on their computer
- Browser

Objectives:

Pre-class objectives:

When you come to class, you should be able to do these

1. Construct objects using a class
2. Activate (call or invoke) methods on objects
3. Call methods that take arguments
4. Call methods that return a value
5. Construct objects from classes

Post-class objectives

These are the objectives to work on during class so you will be ready to start the homework

1. Write, compile, and run a simple Java program

2. Decipher Compile-time errors
3. Upload a program to Codecheck and download the report to their computer
4. Upload the report (signed.zip file) to Canvas
5. Recognize accessor and mutator methods
6. Construct objects from classes

Background:

This is the first lesson in CS49J – Introduction to Java Programming
The students should already be relatively proficient in another programming language

The class is taught in Canvas

Introduction to Lesson:

Ask for questions.

Procedure [Time needed, include additional steps if needed]:

Pre-Class Individual Space Activities and Resources:

Steps	Purpose	Estimated Time	Learning Objective
Step 1: Read the **Chapter 1: 1.3-1.5 and Chapter 2: 2.1-2.6**	**Review the basicprogramming concepts of objects from a Java point of view**	**30 min**	• Activate (call or invoke) methods on objects • Call methods that take arguments • Call methods that return a value • Construct objects from classes
Step 2: **Take quiz 1** **Question 1** 1 point Assume that the main method of the class named Welcome does not contain any compile-time errors. What is the name of the file generated by the Java compiler? ○ Welcome ○ No additional file is generated. ○ Welcome.class ○ Welcome.java **Question 2** 1 point The error message "cannot find symbol" is often a good clue that what kind of error has been made?	**Provide incentive to do the reading**	**10 min**	• Construct objects using a class • Activate (call or invoke) methods on objects • Call methods that take arguments • Call methods that return a value

○ spelling

○ run-time

○ logic

○ division by zero

Question 3 1 point
Which of the following is the **best** choice for a variable identifier that will store a person's name?

○ name

○ nm

○ Name

○ n

Question 4 1 point
Which of the following statements about objects is correct?

○ An object defines the methods for a class.

○ All entities, even numbers, are objects.

○ Every object belongs to a class.

○ An object is a sequence of instructions.

Question 5 1 point
If greeting is a String object, which method call is **incorrect**?

○ greeting.toLowerCase()

○ greeting.length()

○ greeting.toUpperCase()

○ greeting.println()

Question 6 1 point
What is the declared return type for a method that does not have a return value?

○ There is no declared return type when a method does not return a value.

○ String

○ A method must return a value.

○ void

Question 7 1 point
Which of the following declares a variable that can hold a reference to a Circle ? Click all that apply.

- [ ] Circle myCircle;
- [ ] Circle(3)
- [ ] new Circle(3)
- [ ] Circle(3)

Question 8 1 point

Which of the following is a mutator method for
the Rectangle class?

- ○ getWidth
- ○ getHeight
- ○ translate
- ○ isEmpty

Question 9 1 point

Which class is part of the java.lang package? Check the
API,

- ○ String
- ○ PrintStream
- ○ Rectangle
- ○ Circle

Question 10 1 point

Which method could you use to obtain the
string "1234567890" from the string "123-456-7890" ?

- ○ trim
- ○ change
- ○ replace
- ○ alter

In-Class Group Space Activities and Resources:

Steps	Purpose	Estimated Time	Learning Objective

Step 1:
Activity - Homework Project
 	
This will be a PowerPoint slide. Students will, as a group, tell me what to enter in the Eclipse and will enter it into their own IDE getting their own version to work. If there are problems, either a neighbor or I will help them
Record your participation in Piazza clicker
 	
We are going to start at the beginning and set up hw1b together
  ▪ start your IDE,
  ▪ make a project.
    • call it hw1b_in_class
  ▪ read the assignment to see what we need to do
  ▪ how do we do that?
  ▪ notice it shows syntax errors as you go
    • look at the quick fixes but be careful
  ▪ run by right clicking on StringPrinter and choosing Run as Java Application
  ▪ copy/paste the code into Codecheck
  ▪ Click submit
  ▪ upload report to Canvas - you will need to upload it again with the other two files
	Become competent at using the IDE and the homework submission process	**25 min**	1 Write, compile, and run a simple Java program
			
			3 errors
			
			4 Upload a program to Codecheck and download the report to their computer
			
			5 Upload the report (signed.zip file) to Canvas

Step 2:
Activity - Deciphering Syntax Errors
Record your participation in Piazza clicker
 	
One of the challenges in learning a new programming language is to be able to decipher syntax error messages
 	
Let's practice
  ▪ Start a new project in your IDE
  ▪ Get the file, ErrorDeciphering.java
  ▪ Create a class with the file
  ▪ Look at the first error
  ▪ What does the error say? Qhat do you think it means?
	Practice decipher Compile-time errors	**15 min**	**2** Decipher Compile-time errors

▪ Fix the error ▪ Look at the next error ▪ What does the error say? What do you think it means? ▪ Fix the error ▪ Repeat for all the errors			

Step 3:
 	
Activity - Creating objects
Record your participation in Piazza clicker
 	
Call on a student to answer
 	
   Which statement creates a Rectangle object?
 	
  a) Rectangle box;
 	
  b) box = Rectangle(10, 20, 100, 50);
 	
  c) new Rectangle(10, 20, 100, 50);
		5 min	6 Construct objects from classes

Step 4: **Activity - Accessor and mutators** Record your participation in Piazza clicker ▪ What is an accessor method? (class discussion) ▪ What is a mutator method? (class discussion) ▪ Look at the Rectangle class in the API class. Find an accessor. (ask several students) ▪ Find a mutator. (ask several students)	**locate mutators and accessor methods in a class in the Java API**	**10 min**	5 Recognize accessor and mutator methods

Closure/Evaluation:

Ask for final questions

Analysis:
Have a Piazza question that asks them what one thing they still have a question about

Post-Class Individual Space Activities:

Do homework 1 (http://www.laughton.com/obrien/sjsu/cs49j/fall17/homework/homework01.html)

Submit the signed.zip reports into Canvas

Connections to Future Lesson Plan(s):

Each lesson builds on the last. The next lesson will be on making objects from the graphic classes.