CS1110 2 Feb 2010 Customizing a class

Summary of lectures: On course home page, click on "Lectures" and then on "Outline of lectures held so far".

Reading for this lecture: Sections 1.4, (p. 41); 13.3.1 (p. 376).

Read all "style notes" and referenced PLive lectures (activities).

Quote for the day:
I have traveled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won't last out the year.
—Editor in charge of business books for Prentice Hall, 1957

Reading for next lecture:
- Fields; getter & setter methods. Secs 1.4.1 (p. 45) & 3.1 (pp. 105–110 only)
- Constructors. Sec. 3.1.3 (p. 111–112)
- Testing. App. I.2.4 (p. 486)

1

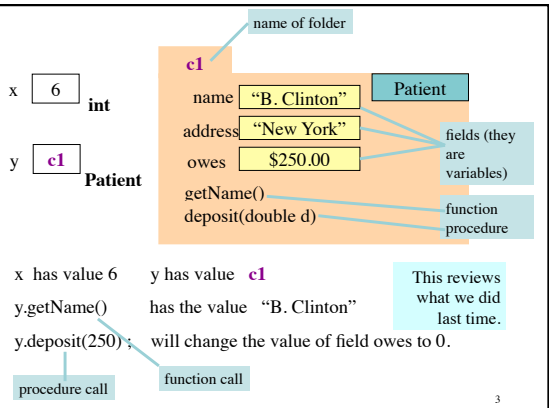
Learning styles

People learn differently.

- **active versus reflective learners**
  learn by doing vs. learn by reflection; groupie vs. loner
- **sensing versus intuitive learners**
  practical/careful vs. fast/innovative
- **visual versus verbal learners**
  pics, charts, films vs. words, explanations
- **sequential versus global learners**
  logical, step-by-step, bottom-up vs. big-picture

Course outline webpage has link to website of Felder and Brent where you can read about this and take a self-scoring test to see your strengths/weaknesses

2



x has value 6 y has value c1

y.getName() has the value "B. Clinton"

y.deposit(250); will change the value of field owes to 0.

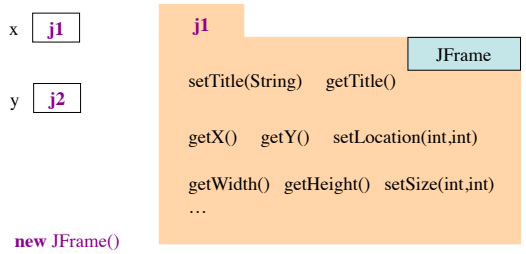
This reviews what we did last time.

procedure call

function call

3

Class javax.swing.JFrame: an object is a window on your monitor.



new JFrame()

Expression: create a new object of class JFrame and yield its name

This reviews what we did last time.

4

Class definition: The java construct that describes the format of a folder (instance, object) of the class.

```
/** description of what the class is for
  */
public class <class-name> {
    declarations of methods (in any order)
}
```

This is a comment

A class definition goes in its own file named

<class-name> . java

On your hard drive, have a separate directory for each Java program that you write; put all the class definitions for the program in that directory.

5

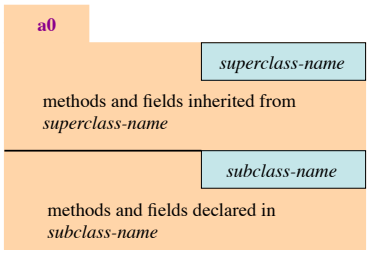
Class definition: The java construct that describes the format of a folder (instance, object) of the class.

```
/** description of what the class is for
  */
public class C extends <superclass-name> {
    declarations of methods (in any order)

}
```

Class C has all the fields and methods that <*superclass-name*> does, in addition to those declared in C. Class C **inherits** the fields and methods of <superclass-name>.

6

```
/** description of what the class is for */
public class subclass-name extends superclass-name {
        declarations of methods
}
```



folder (object) belongs in file drawer for class *subclass-name*

First example of a procedure and of a function

```
/** description of what the class is for */
public class subclass-name extends superclass-name {
        /** Set the height of the window to the width */
        public void setHeightToWidth() {
                setSize(getWidth(), getWidth());
        }

        /** = the area of the window */
        public int area() {
                return getWidth() * getHeight();
        }
}
```



```
import javax.swing.*;
/** An instance is a JFrame with methods to square it and
    to provide the area of the JFrame */
public class SquareJFrame extends JFrame {
        declarations of methods
}
```

folder (object) belongs in file drawer for class SquareJFrame

To the left, draw a manila folder of class SquareJFrame. When we define methods, put them in the proper place

Javadoc

```
import javax.swing.*;
/** An instance is a JFrame with methods to square it and
    to provide the area of the JFrame */
public class SquareJFrame extends JFrame {
        /** = the area of the window */
        public int area() { … }

        /** Set the height equal to the width */
        public void setHeightToWidth() {…}
}
```

The class and every method in it has a comment of the form

/ specification */**

It is a Javadoc comment. Click on javadoc icon in DrJava to extract class specification. DO THIS AT LEAST ONCE IN LAB.

Javadoc

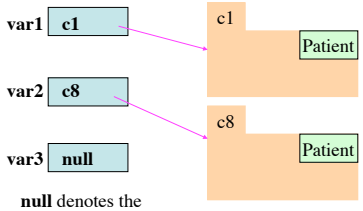
```
import javax.swing.*;
/** An instance is a JFrame with methods to square it and
    to provide the area of the JFrame */
public class SquareJFrame extends JFrame {
        /** = the area of the window */
        public int area() { … }

        /** Set the height equal to the width */
        public void setHeightToWidth() {…}
}
```

An object of class java.util.Date contains the date and time at which it was created.

It has a function toString(), which yields the date as a String.

Write a procedure setTitleToDate, which will set the title of the window to the date.

About null



null denotes the absence of a name.

var3.getName() is a mistake! You get a NullPointerException