Outline for Today

• Office hour discussion
  – Yasir: T 3-5 || 4-6 || 6-8 & Sat or Sun for 4 hours
  – Me: Monday 2 hours, Friday 2 hours

• Strings (and looking at the Java API)
  – StringDemo.java

• I/O (using Scanner)

• Random, Loops, Conditionals (by example)
  – PiDemo.java
Java API

• Let's look again at the StringDemo code
  – don't forget, a String variable holds a reference to a String, not a String!

• All String (and Scanner) methods can be found in the Java API
The Scanner class

- Must import java.util.Scanner (or java.util.*)
- Must declare a Scanner variable (a reference variable) and bind it to the standard input device (System.in, bound to the keyboard)
- Prompts are usually done with a print (vs. println)
- "Reading" methods:
  - next()  [reads a String – what about a char?]
  - nextInt()  [reads an integer]
  - nextDouble()  [reads a double]
Random numbers

• Math.random()
  – returns a “random” double in [0,1)
  – that is, between 0 and 0.99999…

• Generate an int between 0 to 9?
  – (int)(Math.random() * 10)  // parens are important!

• Generate a dice value (1 to 6)?
  – (int)(Math.random() * 6) + 1
Problem solving (a guided exercise)

Suppose you're on a desert island (or a desert peninsula) and you've got some time on your hands. Since it's Qatar, you've also got a bunch of pearls. And since you’re a geek, you now have everything you need to calculate PI…
Static methods

• Methods provide a way to compartmentalize code (and provide for its reuse)

• A method declaration must provide a return type (*void* if no value is returned), name, parameter list, and a block (curly braces). It can also provide a visibility modifier (that defaults to *package*), and the *static* keyword which indicates it belongs to the class as opposed to an object.

• The method name and parameters (only) define its *method signature*. 