CS 134
Intro to Computer Science

Feb 24, 2016
Lecture 8:
Processing Text Strings in Java

Announcements
- Lab 3 due today/tomorrow
- HW 3 posted soon (due Mon)
- If you have questions about Lab/HW grades, please come talk to us!

Last Time
- Binary communication
- Manchester encoding
- Boolean variables

Today’s Plan
- Fun with Strings!
- While loops
String methods()

- `str.length() : int ≥ 0`
- `str.startsWith(otherString) : boolean`
- `str.equals(otherString) : boolean`
- `str.indexOf(otherString) : int ≥ -1`
- `str.indexOf(otherString, startIndex) : int ≥ -1`
- `str.contains(otherString) : boolean`
- `str.substring(startIndex, endIndex) : String`
- `str.substring(startIndex) : String`

https://docs.oracle.com/javase/7/docs/api/index.html?java/lang/String.html

A Rose by Any Other Name

The DICT Protocol

- www.dict.org at port 2628
- Word Searching & the DICT Protocol

- See ChoiceReplacer, DictWordClient

Moving on...

- Initially all execution was linear
- When if-else statements, we introduced branching
Moving on...

- Initially all execution was linear
- When if-else statements, we introduced branching
- While loops also allow us to repeat statements and “visit boxes twice” (in our flow chart)

While Loops

```java
int count = 1;
while(count <= 50) {
    System.out.println(count + " : Goodbye!");
    count = count + 1;
}
```

(Run FiftyWays in BlueJ and in the terminal)
While Loops

```java
int count = 1;
while(count <= 50) {
    System.out.println(count + " Goodbye!");
    count = count + 1;
}
```

Now what happens?

While Loops

```java
int count = 1;  // initialize loop variable
while(count <= 50) {  // begin loop: check condition
    System.out.println(count + " Goodbye!");
    count = count + 1;  // update loop variable
}
```

While Loops

```java
while ( condition )
    statement to be repeated
```

While Loops

```java
while ( condition ) {
    statements to be repeated
}
```
While Loops

statement(s) to initialize loop variable(s)
while ( condition ) {
    statement(s) to perform one step
    statement(s) to move onto next step
}

```java
statement(s) to initialize loop variable(s)
while ( condition ) {
    statement(s) to be perform one step
    statement(s) to move onto next step
}

line = toServer.in.nextLine();
while ( ! line.equals(".")) {
    message.append( line + "\n" );
    line = toServer.in.nextLine();
}
```