CS 134  
Intro to Computer Science  

Feb 26, 2016  

Lecture 9: 
More Loops and Strings!

Announcements  

- HW 3 due Mon  
- Katherine will be in CS lounge on Sunday night from 8-10  
- Hint: Lab 4 is more challenging  
- Please complete Pre-lab before lab to make the best use of lab time!

Last Time  

- String methods  
  String s = "www.amherst.edu";  
  String newS =  
  s.substring(0,s.indexOf("."+1)+1) + "williams"  
  + s.substring(s.indexOf(".",s.indexOf("."+1)));  
- While loops

Today’s Plan  

- More fun with Strings and loops!
Recap: 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

Recap: While Loops

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

DictSentenceClient

- Our main goal for today: Build ChoiceReplacer
- Recall DictWordClient...let’s extend it to an entire sentence
- DictSentenceClient: How to transform an entire sentence
  - While the original sentence still has words in it:
    - Remove first word from original sentence
    - Find synonym for word using dict server
    - Add synonym to end of ‘translated’ sentence
    - Repeat

SentenceMenu

- We know how to break apart and build Strings
  - Recall www.williams.edu example
- We know how to find synonyms
  - See DictWordClient and DictSentenceClient
- We need a JComboBox. See SentenceMenu
  - BuildMenuSlowly: Remove one word at a time from sentence to add to menu.
  - BuildMenuQuickly: Can we avoid the repeated button clicks? Yes! Use a while loop.
BuildMenuQuickly

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

int positionOfSpace = words.indexOf( " " );
while ( positionOfSpace >= 0 ) {
    String word = words.substring(0, positionOfSpace);
    wordMenu.addItem( word );
    words = words.substring( positionOfSpace + 1 ).trim();
    positionOfSpace = words.indexOf( " " );
}
int positionOfSpace = words.indexOf( " " );
while ( positionOfSpace >= 0 ) {
    String word = words.substring(0, positionOfSpace );
    wordMenu.addItem( word );
    words = words.substring( positionOfSpace + 1 ).trim();
    positionOfSpace = words.indexOf( " " );
}