Review

- Remember to take the quiz for assignment 06!

- String declarations and creations
  - String s = "abc";
  - String s = new String("abc");
- length(), indexOf()
- equals()

More String functions

- indexOf used with a substring
  - String str = "abcdefghi";
  - println(str.indexOf("def"));
  - println(str.indexOf("bb"));

- substring(beginIndex, endIndex)
  - beginIndex is inclusive, endIndex is exclusive
  - String str1 = str.substring(3);
  - String str2 = str.substring(3, 6);

Exercise

- String msg = "The quick brown fox jumps over the lazy dog."
- Write code to create substring "fox jumps"
- Write code to create substring "lazy dog"

2-parameter indexOf

- String s = "a man, a plan, a canal Panama";
- int i = s.indexOf("an");
- int i = s.indexOf("an", 4));
- println(s.indexOf("an", i+1));

toString

- toString() is a method defined to return a String, which is meant to be the string representation of an object
- It is what println and print will use when called on an object
- Every object/class inherits from a superclass Object which comes with a toString() method
- Overwrite the toString to how you want your object printed.

Array of String

- Declarations
  - String[] strs = new String[10];
  - String[] strs = {"ab", "cde", "f"};
- Write a function that takes an array of strings strs and another string s and return how many of the strings in the array contain the string s as a substring.
split() and splitTokens()

- String s = "a man, a plan, a canal Panama";
- String[] strs = splitTokens(s, ",");
- String[] strs = s.split(",");

- What will be the length of strs?
- What will be the value of strs[1]?
- Write the expression that gives the number of elements in strs.

WHO Tuberculosis Data


// parseFile1
String[] data;
void setup() {
  // Load data from a file as array of strings
  data = loadStrings("reduced.csv");
  for (int i=0; i<data.length; i++) {
    println(data[i]);
  }
}

// parseFile2
String[] data;
Item[] items;
int count = 0;
void setup() {
  // Load data as array of strings
  data = loadStrings("reduced.csv");
  // create object array
  // length-1 because we throw away line 0
  items = new Item[data.length-1];
  // fill object array
  for (int i=1; i<data.length; i++) {
    // split each line into pieces on ","
    String[] pieces = data[i].split(",");
    items[i-1] = new Item(pieces[0],
                         Integer.parseInt(pieces[1]),
                         Integer.parseInt(pieces[2]),
                         Integer.parseInt(pieces[3]));
  }
  for (int i=0; i<items.length; i++) {
    println(items[i]);
  }
}

class Item {
  String country;  // Country name
  int year;        // Year
  int pop;         // Population
  int inc;         // Incidences of TB per 100,000
  Item(String country,
       int year,
       int pop,
       int inc) {
    this.country = country;
    this.year = year;
    this.pop = pop;
    this.inc = inc;
  }
  String toString() {
    String msg = "In " + year + ", " + country;
    msg += " had population " + pop;
    msg += " and TB incidences per 100k of " + inc;
    return(msg);
  }
}
Who owes how much to whom?