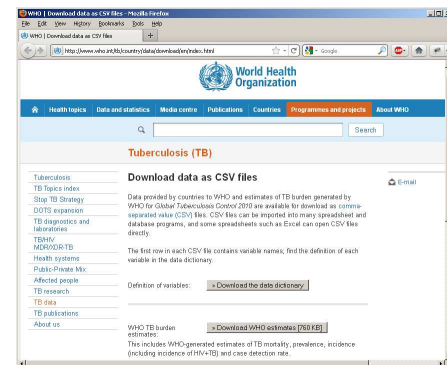


Review

• Strings

- Strings are objects that hold an array of chars
- Making Strings
- ASCII Encoding
- String methods and functions
- Comparing Strings
- Building Strings
- Splitting Strings into an array
- Joining the elements of a String array into a String

WHO Tuberculosis Data



<http://www.who.int/tb/country/data/download/en/index.html>

country	year	inc_100k	inc_100k_low	inc_100k_high	inc_100k_mid	inc_100k_min	inc_100k_max
Algeria	1990	1250412	432	136	754	20000	66
Algeria	1991	1342780	432	136	754	20000	66
Algeria	1992	1457240	432	136	754	20000	66
Algeria	1993	1585048	432	136	754	20000	66
Algeria	1994	1702464	432	136	754	20000	66
Algeria	1995	1828176	432	136	754	20000	66
Algeria	1996	1960780	432	136	754	20000	66
Algeria	1997	1992322	432	136	754	20000	66
Algeria	1998	1995668	432	136	754	20000	66
Algeria	1999	2004100	432	136	754	20000	66

```
country,year,e_pop_mun,e_inc_100k
Algeria,1990,1250412,109
Algeria,1991,1342780,109
Algeria,1992,1457240,109
Algeria,1993,1585048,109
Algeria,1994,1702464,109
Algeria,1995,1828176,109
Algeria,1996,1960780,109
Algeria,1997,1992322,109
Algeria,1998,1995668,109
Algeria,1999,2004100,109
```

Loading Data From a File

• loadStrings() function

- Reads all data and returns an array of Strings
- Each String in the array is a separate line from the file

```
// ParseFile1

String[] data;
int count = 0;

void setup() {
  // Load data from a file as array of strings
  data = loadStrings("reduced.csv");
}

void draw() {
  // Continue printing data until run out
  if (count >= data.length) return;
  println(data[count]);
  count++;
}
```

Split a String based on a single or multiple separator chars

```
String s1 = "12, 34, 56";
String[] as;

void setup() {
  as = split(s1, ",");
  //as = trim(as);
  println(as);
}
```

```
[0] "12"
[1] " 34"
[2] " 56"
```

```
String s1 = "Data: 12, 34, 56";
String[] as;

void setup() {
  as = splitTokens(s1, ",");
  //as = trim(as);
  println(as);
}
```

```
[0] "Data"
[1] " 12"
[2] " 34"
[3] " 56"
```

```
// ParseFile2

String[] data;
Item[] items;
int count = 0;

void setup() {
  // Load data as array of strings
  data = loadStrings("reduced.csv");

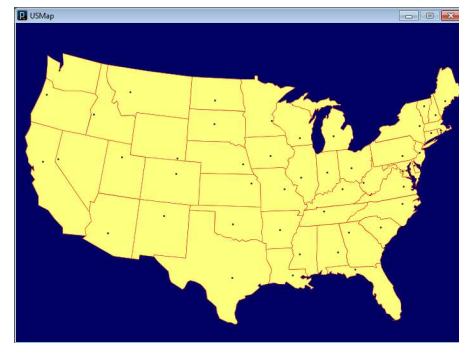
  // Build object array
  items = new Item[data.length];
  for (int i=0; i<data.length; i++) {
    items[i] = new Item(data[i]);
  }
}

void draw() {
  // Continue printing data until run out
  if (count >= items.length) return;
  items[count].pr();
  count++;
}

class Item {
  String country; // Country name
  int year; // Year
  int pop; // Population
  int inc; // Incidences of TB
           // per 100,000

  Item(String line) {
    String[] data = split(line, ",");
    country = data[0];
    year = int(data[1]);
    pop = int(data[2]);
    inc = int(data[3]);
  }

  void pr() {
    String msg = "In " + year + ", " + country;
    msg += " had population " + pop;
    msg += " and TB incidences per 100k of " + inc;
    println(msg);
  }
}
```



USMap.pde, USMap2.pde

File Selection

- `selectInput()` function
 - Displays a file chooser allowing user to select a file
 - Returns a complete path to selected file as a `String`

```
void draw() { }
```

```
void mousePressed()
{
  String filepath = selectInput("Please select a data file");
  println(filepath);
}
```

filepath.pde

Also see `selectOutput()`

```
// stripSpaces

void setup() {
  String s = "abc def vghi";
  String s3 = stripSpaces(s);
  println(s3);
}

// Remove spaces from a string
String stripSpaces( String s ) {

  for (int i=s.length()-1; i>=0; i--) {
    char c = s.charAt(i);
    if (c == ' ') {
      String s1 = s.substring(0, i);
      String s2 = s.substring(i+1);
      s = s1 + s2;
    }
  }

  return s;
}
```

stripSpaces.pde