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Roll No-39

Practical 1: Implementation code for map

```
class Table {  
    String[][] data;  
    int rowCount;  
  
    Table() {  
        data = new String[10][10];  
    }  
    Table(String filename) {  
        String[] rows = loadStrings(filename);  
        data = new String[rows.length][];  
  
        for (int i = 0; i < rows.length; i++) {  
            if (trim(rows[i]).length() == 0) {  
                continue; // skip empty rows  
            }  
            if (rows[i].startsWith("#")) {  
                continue; // skip comment lines  
            }  
  
            // split the row on the tabs  
            String[] pieces = split(rows[i], TAB);  
            // copy to the table array  
            data[rowCount] = pieces;  
            rowCount++;  
  
            // this could be done in one fell swoop via:
```

```
        //data[rowCount++] = split(rows[i], TAB);
    }
    // resize the 'data' array as necessary
    data = (String[][][]) subset(data, 0, rowCount);
}
```

```
int getRowCount() {
    return rowCount;
}
```

```
// find a row by its name, returns -1 if no row found
int getRowIndex(String name) {
    for (int i = 0; i < rowCount; i++) {
        if (data[i][0].equals(name)) {
            return i;
        }
    }
    println("No row named '" + name + "' was found");
    return -1;
}
```

```
String getRowName(int row) {
    return getString(row, 0);
}
```

```
String getString(int rowIndex, int column) {
    return data[rowIndex][column];
}
```

```
}
```

```
String getString(String rowName, int column) {  
    return getString(getRowIndex(rowName), column);  
}
```

```
int getInt(String rowName, int column) {  
    return parseInt(getString(rowName, column));  
}
```

```
int getInt(int rowIndex, int column) {  
    return parseInt(getString(rowIndex, column));  
}
```

```
float getFloat(String rowName, int column) {  
    return parseFloat(getString(rowName, column));  
}
```

```
float getFloat(int rowIndex, int column) {  
    return parseFloat(getString(rowIndex, column));  
}
```

```
void setRowName(int row, String what) {  
    data[row][0] = what;  
}
```

```
void setString(int rowIndex, int column, String what) {  
    data[rowIndex][column] = what;  
}
```

```
void setString(String rowName, int column, String what) {  
    int rowIndex = getRowIndex(rowName);  
    data[rowIndex][column] = what;  
}
```

```
void setInt(int rowIndex, int column, int what) {  
    data[rowIndex][column] = str(what);  
}
```

```
void setInt(String rowName, int column, int what) {  
    int rowIndex = getRowIndex(rowName);  
    data[rowIndex][column] = str(what);  
}
```

```
void setFloat(int rowIndex, int column, float what) {  
    data[rowIndex][column] = str(what);  
}
```

```
void setFloat(String rowName, int column, float what) {  
    int rowIndex = getRowIndex(rowName);
```

```
data[rowIndex][column] = str(what);  
}
```

```
// Write this table as a TSV file
```

```
void write(PrintWriter writer) {  
    for (int i = 0; i < rowCount; i++) {  
        for (int j = 0; j < data[i].length; j++) {  
            if (j != 0) {  
                writer.print(TAB);  
            }  
            if (data[i][j] != null) {  
                writer.print(data[i][j]);  
            }  
        }  
        writer.println();  
    }  
    writer.flush();  
}
```

```
PImage mapImage;
```

```
Table locationTable;
```

```
int rowCount;
```

```
void setup( ) {
```

```
    size(640, 400);
```

```
    mapImage = loadImage("map.png");
```

```
// Make a data table from a file that contains
```

```
// the coordinates of each state.
```

```
locationTable = new Table("locations.tsv");
```

```
// The row count will be used a lot, so store it globally.
```

```

rowCount = locationTable.getRowCount( );
}
void draw( ) {
    background(255);
    image(mapImage, 0, 0);
    // Drawing attributes for the ellipses.
    //smooth( );
    fill(192, 0, 0);
    noStroke( );
    // Loop through the rows of the locations file and draw the points.
    for (int row = 0; row < rowCount; row++) {
        float x = locationTable.getFloat(row, 1); // column 1
        float y = locationTable.getFloat(row, 2); // column 2
        ellipse(x, y, 9, 9);
    }
}

```

Output:

