

**Assignment-3****Individual****Total points: 100**

In this assignment, you will write a **Perl** program to read in the data from a CSV (text file with comma separated values) and generate a visual model of the data, using SVG embedded in an HTML 5 document. The data in the input file represents the survey results of usage numbers of cell-phone computers in a number of academic institutions.

**Input to your program:** A text file (*cell-phones.csv*, for example) with comma separated fields.

**Your program:** Written in Perl, called **myTranslator.pl**

**Output of your program:** An HTML 5 file called **cell-phones\_yourstudentid.html**).

**Input File (cell-phones.csv)**

The input text file contains several lines of text where each line is either a **comment line** or a **data line**. A Comment line starts with a “#” and extends to the end of the line.

A correct data line is a comma separated list of fields, where the first field is the name of the school, the second field, type of cell-phone and the third field, number of users.

**See the example format of text in the input file below:**

**#Comment line**

UC Berkeley, ios, 200

UC Berkeley, windows, 50

UC Berkley, android, 150

SCU, ios, 500

SCU, windows, 20

SCU, android, 200

**Translation of the input into output SVG.**

Your Perl program should generate an HTML 5 document with an **SVG** element in it, where the SVG element should contain the output of your translation as described:

- Ignore comment lines in translation.

- Count the number of users by cell-phone type, in the file and represent each cell-phone type with a suitable SVG element (of your choice) in the output file. For example, each cell-phone type can be represented with an **SVG circle** element, where the radius of the circle can be calculated based on the total number of users for that device type. For example, if IOS has 500 total users, it may be represented with a circle of radius 50 (the no. of users divided by a factor of 10) and similarly for other elements. Or, if you choose to represent the usage of each cell-phone type by a bar (a **SVG rectangle**), you may calculate the height of the rectangle by a suitable factor. After your translation, you will represent the total number of users by each of the 3 cell-phone types (irrespective of how many schools are surveyed). In other words, you will have three circles or 3 bars (or any other symbol you choose) on the SVG element. You may assume that the total number of users surveyed is not more than 1000.
- You will ignore the name of the institution (first field)
- Show the name of the cell-phone type with **SVG text**.
- Apply styles (of your choice) to the elements; either inline, internal or external is ok.

## Assumptions and Requirements:

- You will run your program on command line as,

**perl mytranslator.pl**

Here you are invoking the **perl interpreter** on **mytranslator.pl** which is your program. For the sake of simplicity, you may hardcode the names of the input and output files. They have to be

**Input file name: cell-phones.csv**

**Your program: mytranslator.pl**

**Output of your program: cell-phones\_yourstudentid.html.**

Do not prompt the user to enter the filenames.

- Comment lines are always on a separate line.
- You may use the HTML 5 template details as given below. Please note that your Perl program should create this file.

## Grade Distribution:

- Correctly reading the valid data lines from the input file. (10 pts)

2. Correctness of the program as to the required functionality (as described above). (60 pts)
3. Dividing your program into functions (10 pts)
4. Your creativity in the choice of SVG elements and displaying the visual elements in an easily understood format. (20 pts)

### Output HTML file template.

```
<!DOCTYPE html>

<head>

    <title>Cell-phone Usage</title>

    <meta charset="utf-8" />

</head>

<body>

    <h1>Insert your title here</h1>

    <svg height="100%" width="100%"
    xmlns=http://www.w3.org/2000/svg version="1.1">

        <!--The results of your translation go here-->

    </svg>

</body>

</html>
```

### What to submit:

A zipped file (name your file as assign3\_Yourfirstinitiallastname), with the following:

- a) Your Perl program. Please give your full name and student id as comments in your source code.
- b) Any input file you have used. We will test it with our input file as well.
- c) Any output file you have generated.
- d) A readme file with any specific instructions that we may need to run your program.