File I/O

CMPT 140

Demo 1

What does the following Processing code do?

```
1  line_num = 1  # current line of the file being read
2  f = open("cs_majors.txt","r")
3  for line in f:
4      cs_majors = line.rstrip("\n")
5      cs_majors = cs_majors.split(",")
6
7      num_majors = int(cs_majors[1])
8      fill(255,255,0)
9      ellipse(100*line_num,150,num_majors,num_majors)
10
11     years = cs_majors[0]
12     fill(255,255,255)
13     text(years,100*line_num,50)
14
15     line_num = line_num + 1
16 f.close()
```

Exercise 1

Sprites are pre-rendered drawings that represent some object. Suppose we have a file `sprite.txt` containing instructions for drawing a sprite using Processing commands. Each line begins with "fill" or "ellipse" (Processing commands) followed by its arguments on the same line.

Example `sprite.txt` data:

```
fill,100,50,25
ellipse,100,100,50,100
```

Write Processing code which reads the commands and their arguments line-by-line from the tabular file and draws the resulting sprite onto the canvas.

Demo 2

Suppose we have a list `dots` representing the integer locations of points in a connect-the-dots drawing. Every two data items in the list represents the (x, y) coordinate for one of the points.

Write Processing code which writes the puzzle's dot coordinates, one (x, y) pairing per line, to tabular file `puzzle1.txt`.

Demo 2 (ctn'd)

Example `dots`:

```
dots = [ 10,10, 50,50, 50,100, 10,150 ]
```

Expected `puzzle1.txt` data:

```
10,10
50,50
50,100
10,150
```

Exercise 2

Suppose list `markers` contains information for drawing a set of circular map markers. Every four data items in the list represent a single marker's colour (string), its x-coordinate (integer), its y-coordinate (integer), and its radius (integer).

Write Processing code which writes all marker descriptions to tabular file `markers.txt` such that each marker's description is on its own line.

Exercise 2 (ctn'd)

Example `markers`:

```
markers = [ "red",120,400,30, "green",350,350,50 ]
```

Expected `markers.txt` data:

```
"red",120,400,30
"green",350,350,50
```