# COSC 1P02 Assignment 3
"Method in our Madness"

Refer to Sakai for due date/time

The emphasis for this assignment is methods with parameters. In preparation for this assignment, create a folder called `Assign_3` for the DrJava projects for the assignment.

A Cityscape

Write a Java program to draw a cityscape as seen below. The city consists of some number of buildings. Each building has multiple stories. Each story has windows. Your program should draw a random cityscape as defined below using Turtle Graphics and **methods with parameters**.
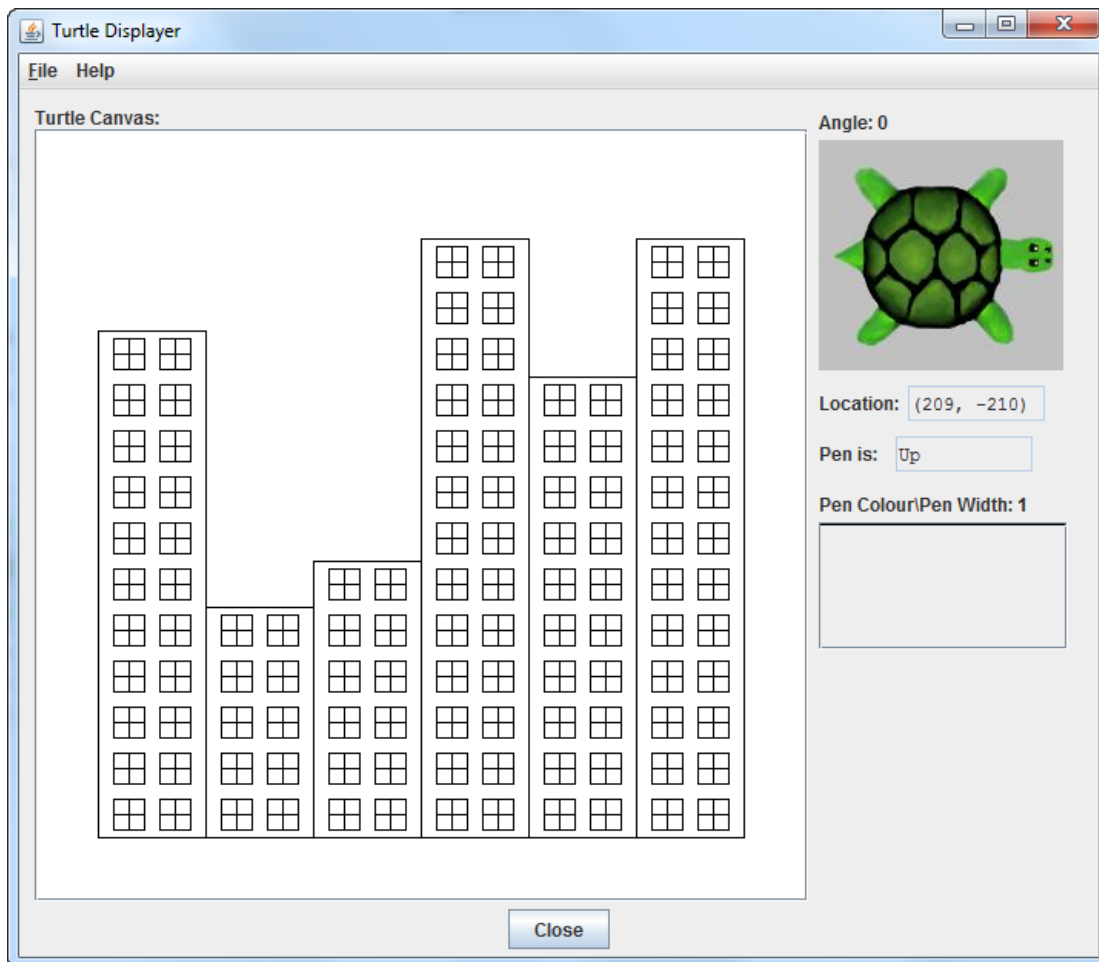
The problem can be defined as such:
- A city consists of 3 to 6 buildings (inclusive), randomly chosen. The cityscape should be centered left to right on the display and ground level should be such that a 15-story building is centered top to bottom.
- The buildings are of width 70 and should be horizontally centred left to right in the display
- Each building is a rectangle with 5 to 15 stories (inclusive), randomly chosen.
- Each story has two windows and is of height 30.
- Each window is four 10x10 squares (remember, squares are also rectangles) centered within the story.

Hints:

- Use a `TurtleDisplayer` with a 500x500 canvas:
  `display = new TurtleDisplayer(yertle,500,500);`
  which creates the display and places `yertle` on the display.
- Use a `FAST Turtle`
- Consider using methods to draw the city of some number of buildings, draw a building of some number of stories, draw a window and draw a rectangle each with appropriate parameters
- Build your program bottom-up, that is, initially simply draw a rectangle, then draw a window, then a building and finally a city.

Submission:

For submission, you **must** submit a **.zip** file containing the following:

- A folder called `Assign_3`, containing your submission
  - Your source file(s) that includes your solution
  - A `.pdf` copy of your final pattern (i.e. output)
  - Your `.drjava` file (or other project file; see below)

On Sakai, submit your .zip file as an attachment, and click to Submit.

Note: Do not submit a `.rar, .tar.gz, .7z`, etc. *Every* major operating system supports .zip, so it is mandatory if you wish to receive a grade for your assignment.

Standards:

Ostensibly, you'll be graded for following basic coding standards and documentation requirements. However, as we haven't really learned any yet, all you really need is:

1. **A comment at the top of all source (`.java`) files including your *name*, *username*, and *student number***
2. Variable names that are either standard or descriptive
   - Using things like `i` and `j` for loop counters? Standard
   - Using a variable like `count`? We can guess what you meant
3. For any *blocks* of code (e.g. loops and methods) insert a brief comment so the reader knows what's inside (e.g. *what*'s being repeated)
4. Anything you think the marker might not understand? Add a quick comment

Additionally, try to remember to fix the indentation of your source files. Jagged margins can be harder to follow along with.

DrJava (and other platforms)

DrJava is recommended, to make grading as easy as possible. However, anything that will run on the COSC lab computers also works.

Make sure to include *everything* (i.e. the whole folder), to avoid forgetting an important

file. (e.g. even if you include a .class file, and a .pdf copy of the source file, the marker can't confirm that compiles)