CT5132/CT5148 Lab Week 01

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1. Have you installed Anaconda (or a different method of Python installation, if you are confident)?
2. Are you able to run Python code in the following scenarios?

- Spyder
- Jupyter Notebook
- IPython
- Command-line (Powershell, Terminal, ...)

3. In the **Grid Driving** notebook, we have *doctests* for `simulate()` and `plan()`. Can you run the doctests and observe that they fail?
4. Let's work on `simulate()`. We need to track *how many* cells have been visited. But to do that, we need to track *which* cells have been visited. Why? What data structure might we use to track *which* cells have been visited? Why? Write out a complete implementation for `simulate()`. When you think you have it right, try the doctests.
5. Write an extra function `draw` which outputs a simple text-based diagram of the cells visited by a car. Hint: the following code shows how to create an *empty* city grid `g` and then "visit" a particular cell, and then print the grid. Don't worry if you don't understand it all yet.

```
xsize = 10
ysize = 10
g = [[0 for _ in range(xsize)] for _ in range(ysize)]
g[4][6] = 1
for line in reversed(g): print(line)
```

6. Write out an implementation of `plan()`, check it with the doctests, and feed its output to `draw()` and to `simulate()`.