

Lab Sheet 3

This lab is a warmup: it will not be collected. This involves use of Python's `os` package.

1. Write a function `setup(submissions, assignment)` that takes two parameters: (1) `submissions` that is the path name of a directory containing a raft of student submissions and (2) `assignment` that is a string representing the name of an assignment e.g. "assignment1". Student submissions are files comprising the student's name (lowercase letters only) and the file name separated by an underscore e.g.

```
murphyjohnmichael_assignment1.py
kellymaryanne_assignment1.py
ryanthomas_A1.py
```

The function should create a directory whose name mirrors that of the assignment and then within that directory create a separate subdirectory for each student bearing that student's name. The function should copy each student's submission into the newly created subdirectory that bears his/her name but renamed to retain the filename only. So in the above example, directory `assignment1`, should contain subdirectories `murphyjohnmichael`, `kellymaryanne`, `ryanthomas`, which in turn contain files named `assignment1.py` (copy of `murphyjohnmichael_assignment1.py`), `assignment1.py` (copy of `kellymaryanne_assignment1.py`) and `A1.py` (copy of `ryanthomas_A1.py`), respectively. The function should print the details of any broken submissions: either that the file name does not match `assignment` or the file extension is not `.py`, such as the `ryanthomas` submission above.

2. Write a function `locate(root, filename)` where `root` is a pathname indicating a directory and `filename` is a string representing the name of a file to be located. The function should search in `root`, and in any subdirectories within `root`, and within any subsubdirectories within those subdirectories and so on. Any file found that matches `filename` (including file extension) should be reported by printing out its path and its name. Use the `os.walk` function.
3. Modify the function in the previous part to accommodate minor variations in the filename during the search by accepting a regular expression for `filename` rather than a fixed string e.g. `r'[aA]assignment(_)?1.py'`. to capture not only 'assignment1.py', but also 'Assignment1.py' and 'assignment_1.py'.