Chris Wallace 4/18/17

15-112 Term Project Deliverable 1 Section H

**Project Proposal:**

Pythoneas is a graph-based shortest path mapping program written in Python. It is named after the Greek navigator Pytheas, and is written in Python. It will be similar to Google Maps and Apple Maps but it allows for the creation and sharing of user-made maps and networks.

Using Dijkstra’s Algorithm, a list of nodes connected a start node to an end node are produced, and using variables within the node and edge objects, edges will be able to be displayed on the standard x-y grid of Tkinter (represented within a dictionary of adjacent nodes relative to a specific node). It calculates the shortest distance/weight between any 2 points on a section of the user made map and displays a path to traverse most efficiently. It will be as specific as to include floors of specific buildings and other attributes should they apply to the scenario.

If possible, an additional feature will be added to include weather that will add more/less weight to outdoor pathways in the event that weather is either pleasant or unpleasant as well as stairs/ramps for accessibility.

The most important feature is Pythoneas is the creation of these maps. Any and all maps are user made, using a simple interface, that can then be accessed and edited by other users. However, when signing in with your username, you find your specific maps, with your modifications, and you can edit other user’s maps and save them to your collection, without changing the map the other user has in their collection.