

COMP261 Assignment 1

Student:

Marker:

Mark:

Minimum out of 30:

- The program reads the data and draws a map.
- It constructs a graph structure using collections of intersections, segments, and roads.

Core out of 35 (up to 65):

- The map can be zoomed and panned.
- The user can select intersections with the mouse, and some details are shown.
- Road names can be entered into the text box and all segments are highlighted on the map.
- The names of all roads joining the selected intersection are outputted, without duplicates.
- The graph (not exhaustive search) is used to find the roads joining a selected intersection.

Completion out of 20 (up to 85):

- Correct code for a trie structure, with methods to add an element and find all elements with a given prefix.
- Trie is used to output the names of all roads which match a prefix in the search box, as well as highlighting them on the map. If the prefix exactly matches a road name, only output and highlight road(s) of that name.

Challenge out of 20 (up to 100, with 5 spare marks):

- A quad-tree structure is used to quickly find intersections near a mouse click.
- The quad-tree retrieves the closest intersection in all cases.
- The polygon data is used to draw a nice map with lakes, parks, airports, a coastline, etc.
- The GUI is improved, with one of mouse-based panning and zooming or adding a drop-down suggestion box to the search bar.