EECS759P Coursework 1 Report

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# Agenda-based Search

## DFS, BFS and UCS Implementation

The implementations of the DFS, BFS and UCS algorithms are modifications of the iterative version of the general search algorithm. States are represented by stations and the line on which they sit. For instance (Whitechapel, District) is a different state to (Whitechapel, Hammersmith & City). The states are encapsulated by the Node class (see code block 5 in the notebook). Each Node object has 4 properties: name (of station), line, parent and cost (representing the average travel time from the parent to the node on a given line). To run the algorithms (dfs\_search, bfs\_search or ucs\_search) simply enter the name of the start and goal stations. Set the “print\_steps” parameter to “True” to see all nodes that have been explored. To get the route found by the function, pass the goal node returned by the function to the build\_path function; this function will return an ordered list of all the nodes on the path as well as the total path cost.

## Comparison of DFS, BFS and UCS

## Modified UCS

## Heuristic Search

# Adversarial Search

## Genetic Algorithm Implementation

## Number of Reproductions

## Hyperparameters