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| TITLE FOR PAPER 2 |

## Team

Team B:

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### Focus

* Comparative analysis of 2 or more inference mechanisms, utilised to solve the “Car Park Puzzle” and their efficiency and comparison to one another.
* Determine fastest approach to solve the “Car Park Puzzle”.

#### Inference Mechanisms:

* A\* Search - Provided by agent-domain (<http://s573859921.websitehome.co.uk/pub/clj/tools/Astar-search(2a).clj)>
* Planner Algorithm – Provided by agent-domain (<http://s573859921.websitehome.co.uk/pub/clj/tools/planner(1a).clj>)
* Additional standard Breadth-first and Depth-first search algorithms depending on time, to support further analysis.

EXPLAIN WHY WE ARE USING THESE MECHANISMS HERE (WE ALREADY KNOW A\* IS IDEAL FOR THIS PROBLEM)

#### Performance Metrics:

* Time taken to reach goal state.
* Steps involved in solution found (Efficiency).
* Possible RAM usage for each mechanism (Time permitting).

### Experimental Brief

#### Netlogo:

* Representing the various states that will be accessed through each of the inference mechanisms.
* Visualisation of the metrics used.
* NetLogo visual representation design (patches/agents).

#### Clojure:

* Define the rules and the world states.

### Key features of experimental scenario

The experiment consists of a slider type puzzle, wherein the goal is to have the car leave the carpark

* Target vehicle has to leave via the exit.
* Target vehicle has to be in line with the exit.
* Vehicles can only forward or backwards, in however many spaces required.
* Vehicles can face in the four cardinal directions.
* Only one exit exists.
* Vehicles obstruct others, preventing movement.
* Only target vehicle is allowed out of the carpark.
* Vehicles can have different lengths.

#### Extending the problem:

* Adding more obstacles to the world.
* Making the world bigger.

### Inference Mechanisms

LOOK AT THIS AS A GROUP

* Create operators for the planner.
* Create tuples which describe our world states.

Describe briefly how each algorithm will be used.

### Workload

* Building the NetLogo representation of the world.
* Write Paper.
* Gather results from the metrics for each experiment.
* Implement A\* algorithm Clojure.
* Implement Planner algorithm in Clojure.