

4 min presentation in DD2438

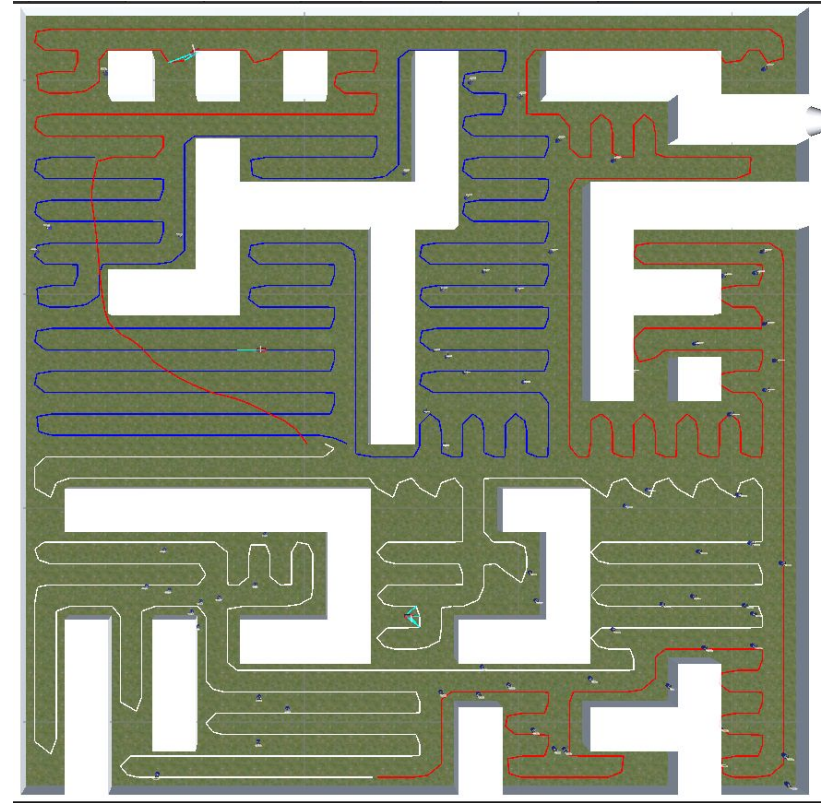
# Group 11, Assignment 2

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<https://docs.google.com/presentation/d/1Le8QsA9-aaEKC1-4fzIYFjkmKamqbETVZJJpecNyrG8/edit?usp=sharing>

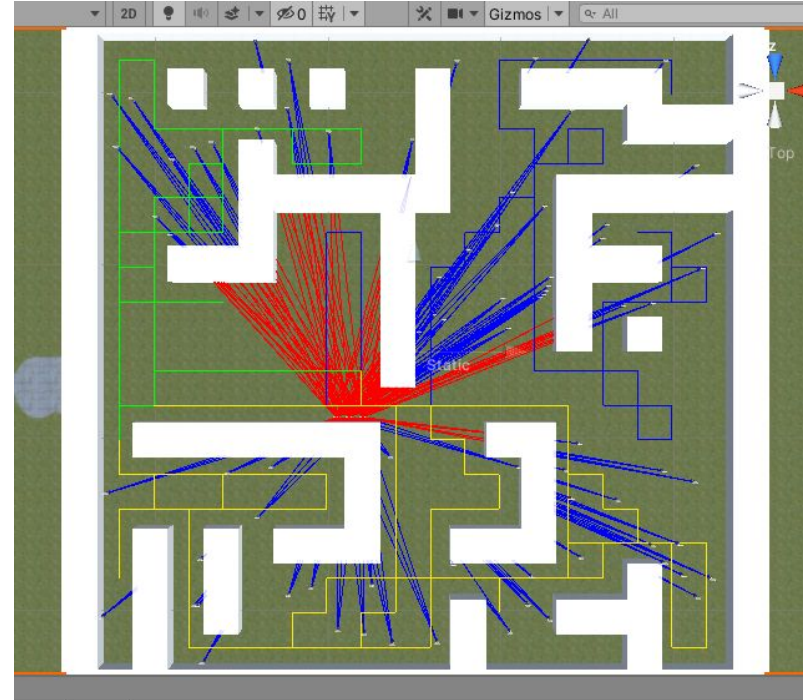
# Problem 1 solution

- Build a weighted Graph, with intervals adjusted to the obstacles
- Build a MST with Prim's algorithm
- Generate a Path
- Drive cars with PD controller
- When a car finishes, help other cars



# Problem 2 - 3 solution

- Generate a Graph that spans the space
- Generate a matrix of Points of Interest
- Generate Guards such that every Point Of interest is covered + some redundancy
- Generate Min set of Guards that covers All the points of interest
- Travelling salesman Problem (p2-p3)  
that connects all the “selected Guards”:
  - Build a tri-partition for the selected Guards
  - random search for a sequence of Guards that minimizes overall distance



# Problem 4 solution

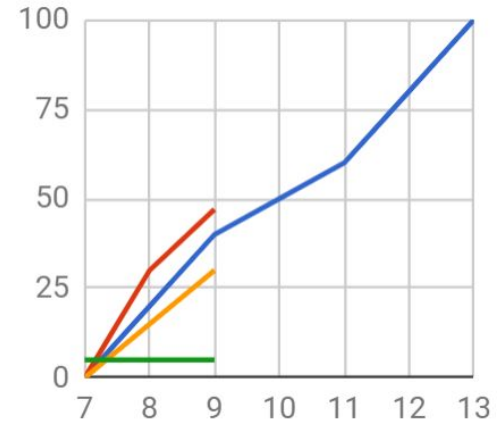
- Calculate the unordered planned follower positions
- Generate combinations of followers and the planned positions
- Assign the positions to followers so their distance sum is minimised
- Drive the followers towards to assigned positions

# Problem 5 solution

- Build a Formation for the units, as p4
- Find ideal attack position by evaluating all the nodes in the graph  
Heuristic:
  - don't stand where lots of enemies can shoot you
  - enemy target must be in the line of sight (LOS)
- Find a best route with Dijkstra to reach that position
  - don't move between a friend and an enemy
  - always move behind shelters

# Progress Status Week 8

- Comment to customer paying 200 000kr for the report:
  - **“All is well. We have spent a bit more time than planned, and progress is as expected”**
- Planned Time spent: 40%
  - (Out of the combined 200h)
- Actual Time spent: 47%
  - Out of the combined 200h
- Actual Progress: 30%
  - (estimate progress towards completing assignment)
- Risk of not completing assignment: 5%



Include this slide, but do not spend time discussing it at the presentation.