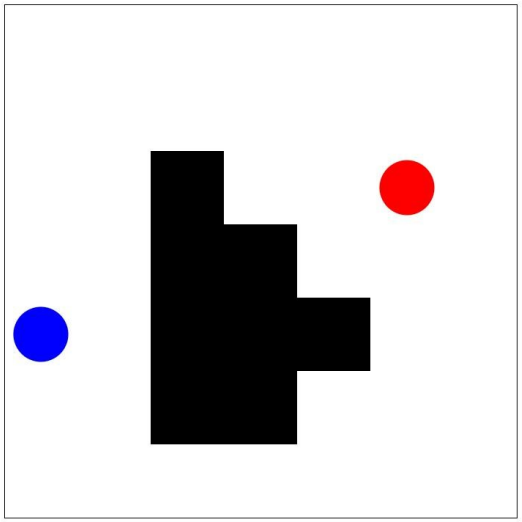
Assignment 2: Path Finding

- Topic: Implement algorithms and data structures for path finding
- Skeleton code provided (only Java, no Python)
- Pairs assignment.

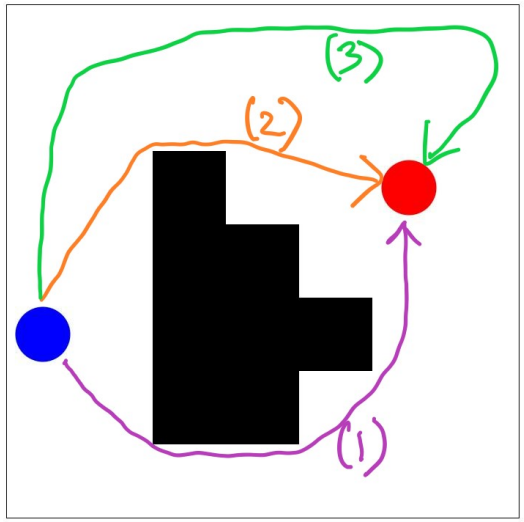
Outline

- Discuss path finding
- Background
- Discuss how to run the framework.

Assignment 2 – Path Finding

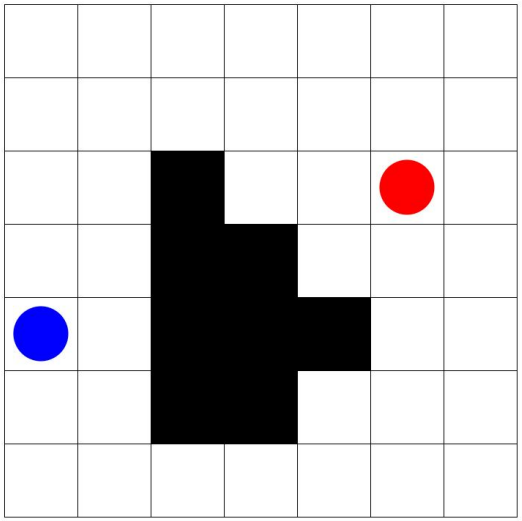


(a) Original map.

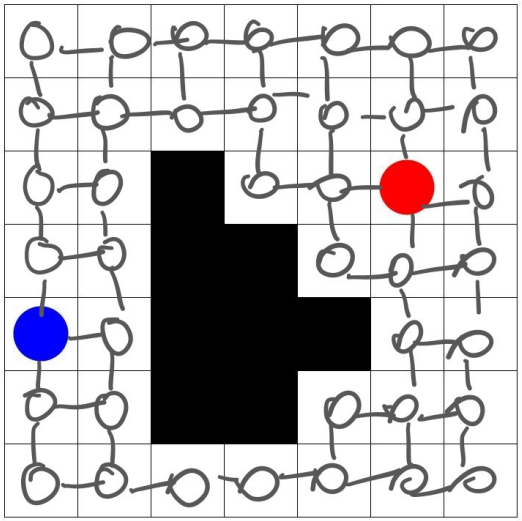


(b) Map with a number of paths.

Assignment 2 – Representation



(c) Grid representation, with rectangular cells.



(d) Graph representation. Each node represents a coordinate and each edge represents adjacency and ability to traverse.

Assignment 2 – Shortest path

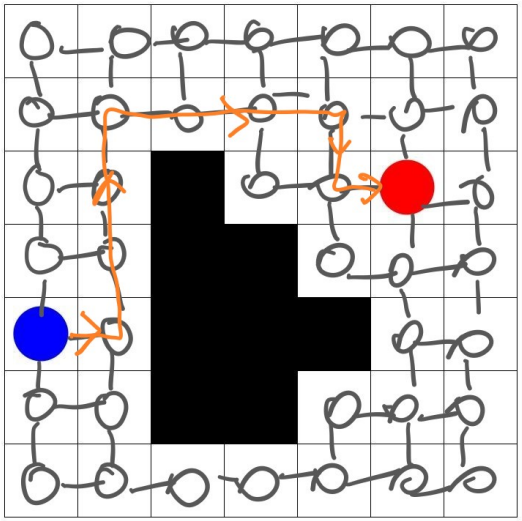


Figure: Shortest path found with Dijsktra's algorithm. Note that while the shortest path may not be unique, the total length/cost is.

Assignment 2 – Skeleton

A number of files:

- PathFinderTester.java (main)
- PathMap.java (map representation)
- DijkstraPathFinder.java (implementation)
- parameter files

How to compile? See specs and README file!
But no Python code, just need to compile java.