Game dev: Dijkstra to A*

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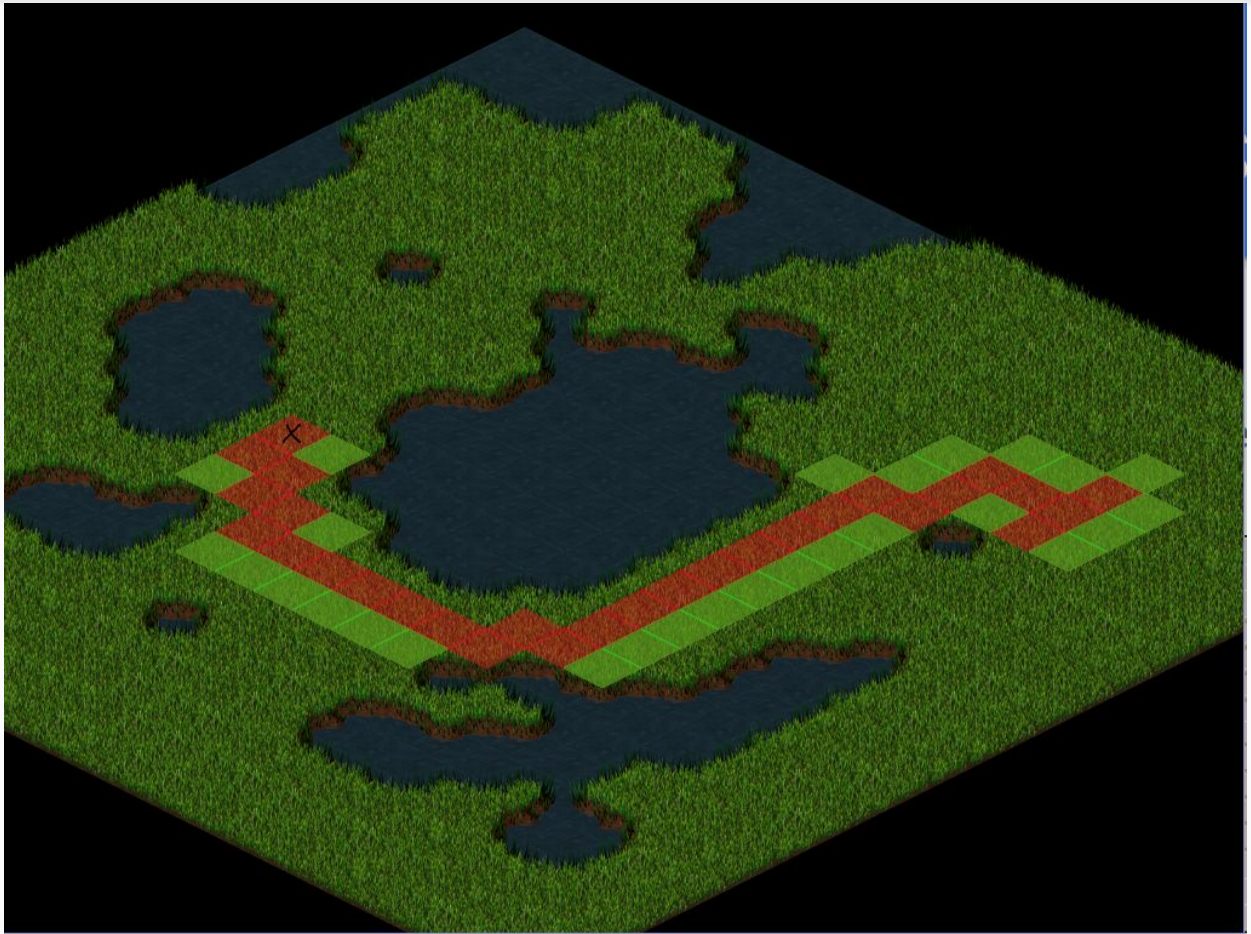
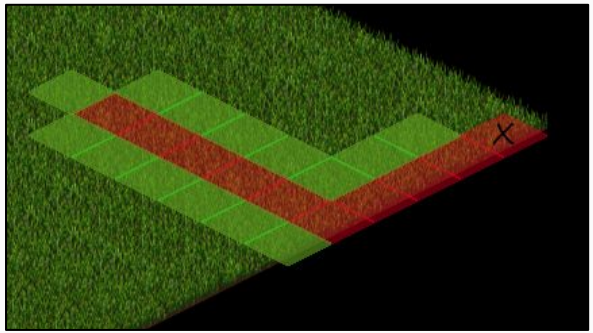
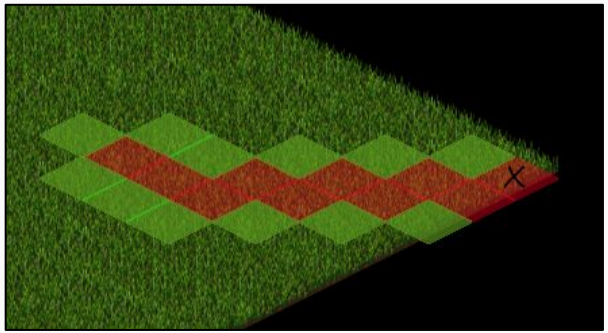
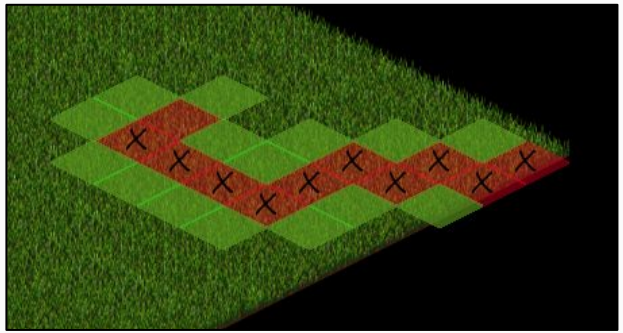
Solution A*



A*

- A* is like Dijkstra, but it will take in account distance to goal
- It is considered a Greedy Algorithm (focus only on the local problem)
- Just by adding a distance heuristic to priority we are done:
    - Manhattan distance / Squared root distance / Full Distance

TODO (before)

- Make sure you finish Dijkstra and that you understand it 100%
- Concept of “Cost so far” must be implemented since A* can revisit nodes
    - And unlike Dijkstra in A* it is quite a common case!

TODO 1

- We want to stop propagation as soon as we find the goal tile
- When clicked remember in a property the goal position in tile coordinates
- Stop propagation as soon as goal is found
- You can test with Dijkstra

TODO 2

- Create a PropagateAStar() as a copy from Dijkstra
- Now to add a neighbor in the frontier:
  - Add to the cost that goes into the queue the distance heuristic of choice
- The heuristic should be one of three:
  - Manhattan distance
  - Square root distance
  - Distance

Homework

- Create a full new module for A* pathfinding:
- It should receive an abstraction of the scene (all navigation data)
- It should remember the last path generated