Lecture 2 – Searching

Lecture outline
- Last week
  - Introduced AI and the module
  - Brief recap of data structures
- This week
  - Introduction to searching methods
  - A* algorithm
  - Pathfinding

Why search?
- Finding a path from a starting point to an end point.

Depth-First Search
Taken from Jones (2005)

Breadth-First Search
Taken from Jones (2005)

Which is best?
- Breadth-first Search?
- Depth-first Search?
A Star

- Similar to DFS and BFS
- Measures of the cost of the nodes
- DFS and BFS search blindly - The work 'blindly' relying on the approach to get the answer.
- A* is a Heuristic search it uses a measure to direct the follow the system.

A Star/A*

- Three parameters
  - H  Distance of node from goal node
  - G  Cost of moving from the parent node to the new node.
  - F=H+G

For each adjacent node

References

- Jones MT(2005)  
  AI Application Programming 2nd Edition  
  ISBN 1-58450-421-8