**APPLICATIONS OF VARIOUS SEARCH ALGORITHMS:**

**INFORMED SEARCH ALGORITHMS:**

1. Greedy best first Search:

* Minimum Spanning Tree Problem (e.g. Prim’s Algorithm)
* Shortest Path Problem (e.g. Dijkstra’s Algorithm)
* Fractional Knapsack Problem

1. A\* Search:

* path-finding
* graph traversals.
* They are used in games! But how?
* Ever played tower of defense.

**UNINFORMED** **SEARCH** **ALGORITHMS**:

1. Breadth First Search:

* **Shortest Path and Minimum Spanning Tree for unweighted graphs.**
* **Peer to Peer Networks:** In Peer to Peer Networks, Breadth First Search is used to find all neighbor nodes.
* **Crawlers in Search Engines.**
* **Social Networking Websites:**In social networks, we can find people within a given distance ‘k’ from a person using Breadth First Search till ‘k’ levels.

1. Best First Search:

* The idea of Best First Search is to use an evaluation function to decide which adjacent is most promising and then explore. Best First Search falls under the category of Heuristic Search or Informed Search.

3) Depth First Search:

* For an unweighted graph, DFS traversal of the graph produces the minimum spanning tree and all pair shortest path tree.
* A graph has cycle if and only if we see a back edge during DFS. So we can run DFS for the graph and check for back edges. (See [this](http://people.csail.mit.edu/thies/6.046-web/recitation9.txt)for details)
* Path Finding