**Java Tips**

* LinkedList:
  1. Part of the *Collection* framework in *java.util.package*
  2. Linear data structure – elements are not stored in contiguous locations
  3. Every element is a separate object with a data part and address part.
  4. The elements are linked using pointers and addresses.
  5. Suitable for dynamic manipulation, such as insertion/deletion
  6. **Limitation**: elements cannot be accessed directly. Instead, we need to start from the head and follow through the link to reach the node we wish to access.

**Search Algorithm**

|  |  |  |
| --- | --- | --- |
|  | **Advantage** | **Disadvantage** |
| **DFS** | * Require less space: O(d) | * Delay search for node close to the root but not belonging to the first few deep substrees |
| **BFS** | * Good for local search | * Require more space: O(n) |

1. Iterative deepening depth-first search (IDDFS) is invented to inherit the advantages of both DFS and BFS.
   1. The algorithm visits the search tree in the same order as DFS
   2. The cumulative order in which nodes are first visited is BFS
2. A\* Search
   1. Find path that minimizes *f(x)*:
   2. *F(x) = g(x) + h(x)*
   3. *G(x)* is the cost function, *h(x)* is the estimated cost from the current to destination nodes.