Assignment-01

1) Model based Agent :

* A model-based agent in AI is an intelligent agent that maintains an internal model of the environment to make informed decisions. This model helps the agent understand how the environment changes and predicts future states based on its actions.

Key Features:-

Internal Environmental Model, Maintain knowledge about the world,

Perception and updates: updates the model based on new information from sensors.

Decision Making: choose actions by simulating the outcomes using the model.

Learning Capabilities: can learn and improve its model over time.

Example:-

A Self Driving Car uses a model of traffic rules, road conditions, and other vehicles behaviour to navigate safely and efficiently.

2) Algorithm BFS

1) Start from the initial node (source)
2) Mark the current node as visited
3) Enqueue the current node
4) While the queue is not empty:
   i) ~~Dequate~~ Dequeue a node
   ii) visit all its unvisited adjacent nodes and mark them as visited
   iii) Enqueue these adjacent nodes.

```
BFS (node): # PSEUDOCODE
    Create a queue and enqueue the
starting node
    mark the node as visited
    while the queue is not empty:
        dequeue a node
        for each adjacent unvisited node:
        mark as visited
        enqueue the node.
```