ADS lab test-1

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VIVA

1] What is A* search algorithm

A] A* search algorithm is an optimal algorithm that uses the function $f(n) = g(n) + h(n)$

- $g(n)$: Path cost upto node n
- $h(n)$: heuristic function

2] What are the different methods used to calculate distance approximation heuristically.

A] 1) Manhatton distance

2) Displacement.

3) Hamming distance

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3] What is a heuristic function

A] A heuristic function gives us an approximation of how far the goal state is, from the current state.

It helps us to check whether we are going closer to the solution or away from it.

Ex: Manhattan Distance.

4] What are agents?

A] An agent is an entity that takes the input from the environment through sensors and ~~acts~~ performs actions through actuators.

Ex: Part Picking robot, Vaccuum cleaner.

5] How an agent senses?

A] An agents senses using sensors. The information it senses is called as a percept.

Ex: Camara, Infrared sensor.

6] Why IDS is better than other search algorithms

A] It has the best time complexity. It's max depth is initially 1.

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Then it increases by 1 each time until the solution is found. This prevent the algorithm from search indefinitely.

7] Where are IDS, A* implemented in real-life application?

A] GPS, Routing algorithms in Computer Networks, Flow

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