# Vidyavardhini's College of Engineering and Technology

## Department of Artificial Intelligence & Data Science

AY: 2024-25

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|---|---|---|---|
| Class: | | Semester: | IV |
| Course Code: | | Course Name: | Artificial Intelligence |

| | |
|---|---|
| Name of Student: | Sainath Khot |
| Roll No. : | 20 |
| Assignment No.: | 2 |
| Title of Assignment: | Intelligent Agent |
| Date of Submission: | 30/7/24 |
| Date of Correction: | 6/08/24 |

### Evaluation

| Performance Indicator | Max. Marks | Marks Obtained |
|---|---|---|
| Completeness | 5 | 03 |
| Demonstrated Knowledge | 3 | 03 |
| Legibility | 2 | 02 |
| Total | 10 | 08 |

| Performance Indicator | Exceed Expectations (EE) | Meet Expectations (ME) | Below Expectations (BE) |
|---|---|---|---|
| Completeness | 5 | 3-4 | 1-2 |
| Demonstrated Knowledge Legibility | 3 | 2 | 1 |
| Legibility | 2 | 1 | 0 |

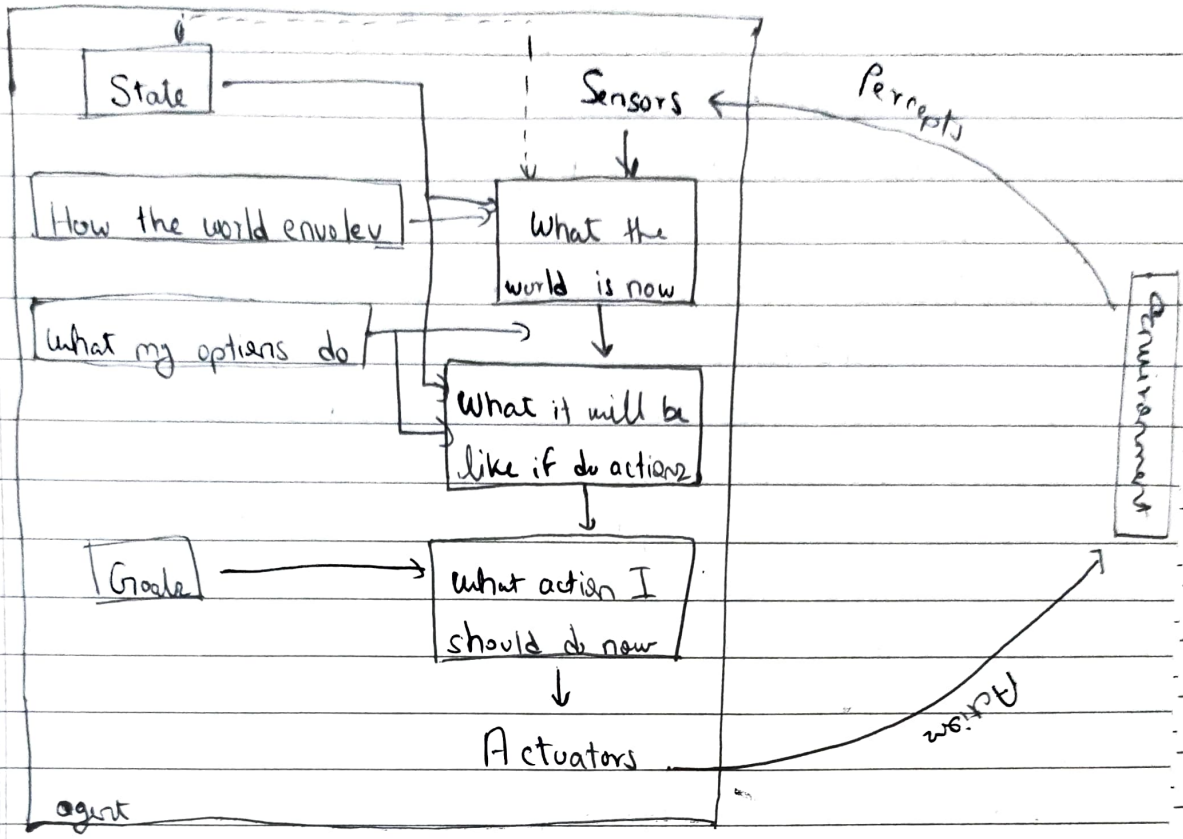
### Checked by

**Name of Faculty** : Miss Rujuta Vartak

**Signature** :

**Date** : 6/8/24

Q1




=) Travel booking assistant

The best suited agent architecture is goal based

i) Future booking a trip is a high level goal and finding flights, booking hotel, renting a car are the sub goal.

ii) Perception : User inputs travel, budget preferences. It extracts keys and entities

iii) It uses its knowledge base such as popular destinations, flight options, hotels and also uses the dynamic knowledge about the the current flight price hotel availability, etc.

iv) Then it perform task decomposition & sequence planning i.e searching flights first, then hotels and finally car rentals

v) Action selection: Query flight database, hotel booking system, car rental agencies

vi) Action execution: Display available options to the user.

vii) Progress Tracking: Check if flight, hotels, cars meet user constraints.

viii) Analyse user selection and feedback to personalize future recommendation. A goal based schema ensures that the AI system is structured to achieve specific objectives. Efficiently adapting to user needs and continuously improving performance.

Q2)

⇒ i) Observation or Partially observable: It is partially observable because the it has limited or incomplete information for instance, areas with intermittent GPS signals or obstructed views due to buildings.

ii) Deterministic or Stochastic: It is stochastic as the outcome is uncertain due to variable like weather change or unexpected obstacles. This require probability models and adaptive planning

iii) Static or dynamic: It is dynamic as the environment changes over time, often unpredictable. This includes moving vehicles, pedestrians and varing weather conditions

iv) Discrete or continuous environment : It is continuous environment as it has infinite number of possible states. For instance, the drone's exact position in 3D space and its continuous flight path

v) Episodic or Sequential environment : Sequential environment as the current actions can influence future states and task.

vi) Single agent or Multiagent : It is multi-agent as many drones or agents such as 10 bots other UAVs or human operated vehicles etc. are present. This requires co-ordination, collision, avoidance and possibly communication between agents.