Quiz 02 – Intelligent Agent

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Description automatically generated**Question 01.** Consider the following activity. A little boy is playing hide-and-seek with his friends in the playground. He is the seeker that attempts to locate all hiders, and he will yell "Found" every time he catches a hider.

Specify the PEAS description for the task environment of the above activity.

**P**erformance measure: The seeker finds all the hiders

**E**nvironment: Playground

**A**ctuators: Mouth, Legs, Hands

**S**ensors: Eyes, Ears

**Question 02.** Identify the following task environment properties of the above task. Do not forget to give your explanation for every dimension.

*Assume that the hiders does not move while the catcher is finding the hiders*

Fully observable vs. Partially observable.

Partially Observable: The seeker can not observe the entire environment due to obstacles such as trees, barrier, etc.

Single-agent vs. Multi-agents.

Single-agent: only one seeker that has the ability to sense (recognize) its surrounding environment through sensors and act appropriately according to that environment through actuators.

Deterministic vs. Stochastic.

Stochastic: The next state of the environment is not determined entirely based on the current state and the seeker's actions (at this current state).

Episodic vs. Sequential.

Sequential: The choice of action to pursue is influenced by the seeker's past perceptions and actions, eliminating the need to rediscover previously explored locations (due to the hiders are not moving while the seeker is finding as the toassumption)

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Description automatically generated**Question 03.** Consider the following activity. A little boy is playing blind man's bluff with his friends in the playground. He is the catcher that attempts to touch any hider to switch their roles, while the hiders shout and laugh to distract the catcher.

Specify the PEAS description for the task environment of the above activity.

**P**erformance measure:

* The catcher find one hider to switch the role
* The hiders avoid to be caught by the catcher

**E**nvironment: Playground

**A**ctuators: Mouth, Hands, Legs

**S**ensors: Ears, Eyes, Hands

**Question 04.** Identify the following task environment properties of the above task. Do not forget to give your explanation for every dimension.

Fully observable vs. Partially observable.

Partially observable: The catcher doesn't have full access to the complete state of the environment. Indeed, the catcher cannot see their surroundings because their eyes are blindfolded, and can only determine the state of the environment through the shout and laughter of hiders and things within reach by touching.

Single-agent vs. Multi-agents.

Multi-agents: there are more than one catcher that has the ability to sense (recognize) its surrounding environment through sensors and act appropriately according to that environment through actuators because a hider can switch the role to the catcher if he is touched.

Deterministic vs. Stochastic.

Stochastic: The next state of the environment is not determined entirely based on the current state and the seeker's actions (at this current state).

Episodic vs. Sequential.

Episodic: The choice of action to pursue is influenced by the agents' past perceptions and actions, and is only influenced until the roles of the players change (a hider becomes catcher)

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