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CPTS 440

Artificial Intelligence

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Homework 1

1.

YOU: What is your name?

Mike: My name is Mike. How are you doing today?

YOU: Good and you?

Mike: I'm doing fine. Thank you.

YOU: what did you just ask me?

Mike: I can ask whatever questions I want to ask.

YOU: What was the first thing you told me in this conversation?

Mike: Sorry, I don't know.

YOU: What is 5x5

Mike: You're asking a great question!

YOU: Can you do math?

Mike: I can only do simple calculation.

YOU: Give me an example.

Mike: Well, I can't give you an example.

YOU: why not?

Mike: It's not interesting to me.

YOU: I'm a college student.

Mike: Do you like being a STUDENT?

YOU: Sure.

Mike: Ask you a question. Is it difficult to get a job in your country?

YOU: Am I a student?

Mike: Yes. You are my student now.

No, Mike did not pass the Turing Test. It did not solve simple questions and has a terrible memory of previous statements. Anything Mike can't answer it tries to say it didn't want to answer that question anyway.

2.

A) Sensors: radar, cameras, GPS, steering, relative position sensors, phone or other communication sensors

Actuators: Steering, accelerate, propellers, signal, make call, snap photo, identify photo

Performance Measures: + For identifying criminal correctly, - for wrongly identifying criminal, + for good photo of criminal, - for bad or blurry photo, + for flying safely and unnoticed, - for flying dangerously or crashing, + for contacting FBI, - for zero contacts of FBI when finding a criminal.

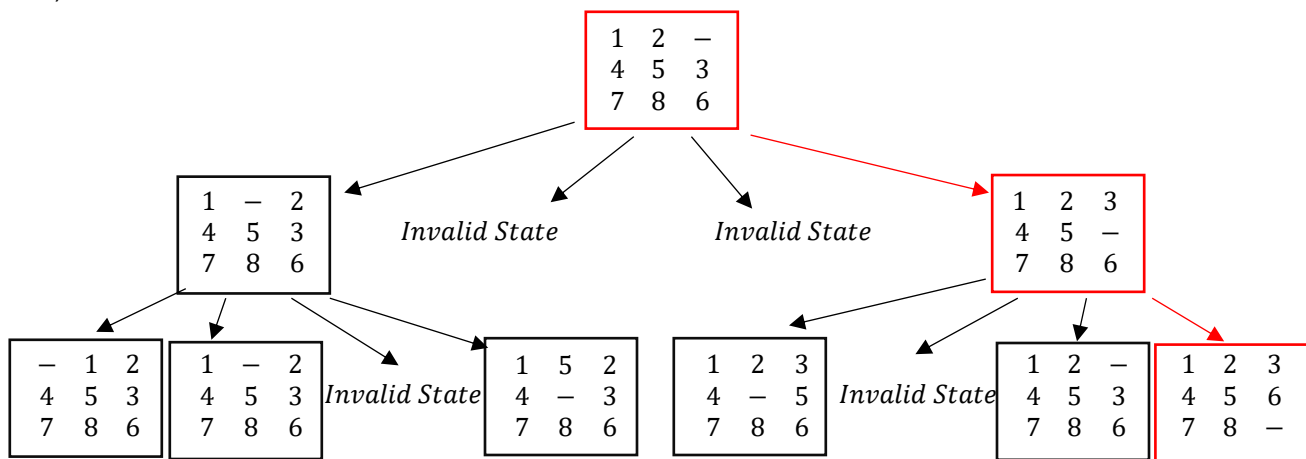
B)

i. Partially observable: The drone only knows what it sees it doesn't know what is going on when it's sensors don't capture it, therefore it is not fully observable.

- ii. Single-Agent: Only one drone is flying around all these cities it seems, as far as described this is a single agent.
- iii. Deterministic: The next state of the drone is determined by current state. If a bird is about to hit the drone it should move out of the way, which is acting on the next state based on the current state of the bird moving toward the drone.
- iv. Sequential: The drone should follow a target if it is confident that it found a criminal. Which means that if past actions found a criminal future actions should follow that criminal, which is sequential.
- v. Dynamic: Vision data changes frequently and the drone would need to be able to adapt quickly.
- vi. Continuous: Vision data when looking at a city street may have an uncountable number of states, therefore it is best if the drone is set for a continuous environment.

3.

A)



B)

