

Part 1:

1. The environment of the lab assistant agent is dynamic, partially observable, sequential, stochastic.
  - a. Dynamic since the patient's health can change due to many events
  - b. Partially Observable since the agent cannot help with all aspects of health
  - c. Sequential because the agent can take an action to impact the health of the patient after
  - d. Stochastic because the lab assistant does not provide care based on the current state because the patient's health is partially observable and needs probabilistic understanding.
2. The environment of an artificial poker player is semidynamic, fully observable, sequential, Deterministic
  - a. Semidynamic because the environment doesn't change but the agent's performance does due to the human player
  - b. It is fully observable since the agent can have the complete state of the environment at any time
  - c. The environment is sequential due to the choices the agent can make that can affect its score at the end of the game
  - d. The environment is deterministic since every step of the game is completely dependent on the previous state
3. The environment of the entertainment agent is dynamic, fully observable, sequential, stochastic
  - a. Dynamic since new movies and tv shows come out

- b. Fully Observable since the agent can always access shows and movies from its service
  - c. Sequential since the agent can give a new show to the user that changes the user's viewing habits
  - d. Stochastic since the new recommendations given to the user has some uncertainty whether the user will enjoy them.
4. The environment of the mental health chatbot is dynamic, partially observable, sequential, stochastic
- a. Dynamic because the mental health of the user can fluctuate
  - b. Partially Observable since the agent cannot understand the mental health precisely due to it being restricted to SMS so it adds uncertainty
  - c. It is sequential since the agent will require many states to diagnose the user
  - d. Stochastic because there lies some uncertainty to diagnosing the user
5. The environment of the robotic submarine is dynamic, partially observable, sequential, deterministic
- a. The environment is dynamic because the ocean has its own living ecosystem that always changes
  - b. The environment is partially observable since the submarine's sensors cannot provide a complete state of the ocean
  - c. The environment is sequential because the submarine can only have a certain amount of samples and can impact the ecosystem
  - d. Deterministic because the submarine only needs to collect samples but does not have to deal with uncertainty.

## Part 2:

Initial State: <!holdingStick, !chairInMiddle, !onChair>

- a. Goal State: <holdingStick, chairInMiddle, onChair>
- b. View Monkey State Space.pdf in the repo

## Part 3:

1. Struggles of Kuki
  - a. I said that I accidentally injured myself but it did not ask me how I injured myself which is normal english communication.
  - b. Kuki cannot clarify her statements when users do not understand her
  - c. It could not understand the term soccer but understood football.
2. Strengths of Kuki
  - a. It could scrape information from the internet to user's questions.
  - b. It has clear understandings of the user's inputs
  - c. Kuki has short-term memory in terms of remembering aspects of the conversation
3. Her not being able to have a conversation with flow is what made her seem artificial