**CS 370 7-3 Project Two**

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* **Analyze the differences between human and machine approaches to solving problems.**
  + Describe the steps a human being would take to solve this maze.

The only way to solve this would be through trail and error, the maze would take the human far longer to solve versus the AI.

* + Describe the steps your intelligent agent is taking to solve this pathfinding problem.

The AI will take a similar approach and use trial and error to find the path out of the maze. But unlike the person the AI can develop strategies and learn much faster, through iteration the AI can run through the maze at an insane speed.

* + What are the similarities and differences between these two approaches?

Both a human and AI will use trial and error to learn how to perform the maze the main difference would be the AI can learn and adapt to changes in the environment and the maze faster than a human can.

* **Assess the purpose of the intelligent agent in pathfinding.**
  + What is the difference between exploitation and exploration? What is the ideal proportion of exploitation and exploration for this pathfinding problem? Explain your reasoning.

Exploitation - selecting a path our route that is perceived to be the best route base on the information present to you, gains more relevance and can be improved based on new or found data.

Exploration – Tring new paths and collecting information to improve and find better routes that can improve the total time exploring.

The optimal proportion should be 80% exploitation 20% exploration, this is to improve time it takes to perform a task that can be done through a simple process and is repeatable but then it can also improve the tasks as time goes on to find new ways to perform the tasks incase there was a blatant shortcut that was missed early on

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* + How can reinforcement learning help to determine the path to the goal (the treasure) by the agent (the pirate)?

The reinforcement learning process can improve the Ais understanding about the game state and how it can improve decision making by changing the way it weighs choices.

* **Evaluate the use of algorithms to solve complex problems.**
  + How did you implement deep Q-learning using neural networks for this game?

Set up the system of training, set the game state, tell it how to chose what to do, then set rewards and punishments and evaluate its loss.