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Phase 2 Readme

Strategy: For this phase, we completely redid our strategy. Instead of trying to infer the rule by enumerating card relationships ourselves, we implemented a decision tree. The decision tree learns the relationships between cards based on their attributes, and our rule is formed directly from the decision tree. Our tree is made up of nodes which represent card attributes such as color or suit. Our nodes split on instances of card attributes such as red or spades. We implemented the ID3 algorithm, which relies on information gain, to build our tree. Once the tree is constructed, we parse through it in order to get a rule.

Current State: Currently, our implementation can capture most simple rules and pieces of more complex rules. We believe we can improve our algorithm by enumerating more possible relationships between card attributes that can exist in our tree. Additionally, we did not complete the score function to the full extent. We did not implement grading of the rule returned by our program.

Execute: In order to execute our program, simply run the game.py file. This file will call our scientist function which builds our decision tree.