**Team 13**

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**Problem Statement**

AI is becoming very popular in both games and simple life-management. There exist many AI for simple games like Poker, Chess, or Go. However there does not exist any AI for popular humor-based card matching games like *Apples to Apples and*, *Cards Against Humanity* We would like to create a generic AI for playing games like these.

**Project Objectives**

* Create an AI that can:
  + ~~Learn and improve~~ Analyse human played games and update its database to “learn” what card combinations produce the best result.
  + Win games (Not sure what how to reword this to be more concrete)
  + ~~Convince that it is human~~ Achieve “human-like” results by being able to get close to or win games.
* Create an interface through which the AI can observe and play online
  + If using “Cards against Humanity” as a card base, then the site Xyzzy will be used to let the program spectate games
  + If using “Cards against Humanity” as a card base then the interface will be able to locate and press buttons on Xyzzy
  + If using “Cards against Humanity” as a card base then the interface will be able to recognize when a card is played on Xyzzy and identify the metadata we have stored on that card
  + If using “Cards against Humanity” as a card base then the program will be able to store the state of the game based on the images displayed on the web page Xyzzy.
  + By spectating games it will update its database with the result from games (i.e. the winning card combinations)
  + When playing, the AI will pick a card that has the best “score” with the black card. If the AI wins, then that card’s score will increase with respect to the black card that it was matched with. If the AI loses, then it will decrease the score of the card and increase the score of the winning card.
* Create a database to store this information about the card set
  + The database will be able to hold relative values of each card in the game
  + The database will be able to be read by the program
  + The program will be able to write to the database
  + The database will be made in such a way to find the best card through a single sql query.

**Stakeholders**

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| --- | --- |
| Users | Card Game Players  Team 13 |
| Team Leader | Adam McDonald |
| Engineers | Adam McDonald  Maxwell Jones  Peter Xeros  Avi Agarwal |
| Project Owners | Avi Agarwal  Adam McDonald  Maxwell Jones  Peter Xeros |

**Deliverables**

* Create a database that stores metadata about cards and card combinations
* Create a program that observes games and manipulates the weightages on card combinations
* Create a program that uses the knowledge of the games it has observed to efficiently play the game itself
* Users playing against the AI should not be able to distinguish it as an AI
* Create an AI that continues to improve based on its on experience