1. (10 pts) Describe the requirements of the problem with a simple document that lists the rules of the database in the problem domain language. Then from that list of rules and notes highlight the list of possible nouns and actions you identified. I'm expecting this to be a short 1 or 2-page document.

My project is a website that collects and shows data on winning decklists in tournaments from a game called Magic: The Gathering. Magic: The Gathering (MTG) is a competitive card game played in tournaments around the world. Decks in MTG have 5 cards. Additionally, decks can have up to 4 of any given card across the maindeck + the sideboard excluding basic lands (and a few other exceptions). Users should be able to browse many things in the app. Firstly, they should be able to see tournament results, ordered by result showing each decklist, the person who played the deck, and what archetype it is. Users should also be able to see a certain person's history of tournament results and the decks that they used. Lastly, the app should allow the user to have a special page for each individual card. This page will show, what decks the card is played in, its price, various winrates, and various descriptors.

Nouns:

- Decklist
- Tournament
- Deck
- Game
- Maindeck
- Card

- Sideboard
- Value
- Variance
- Basic lands
- Person
- Archetype
- User
- History
- App
- Page
- Price
- Winrate
- Highest synergy value
- Descriptor

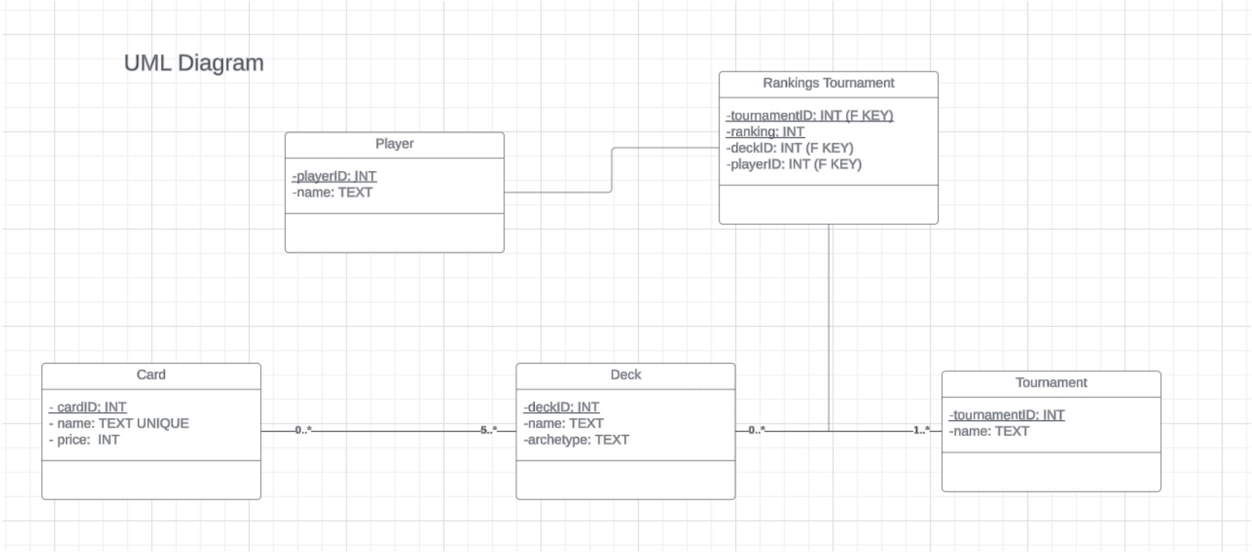
Verbs:

- Collects
- Shows
- See
- Browse
- ordered

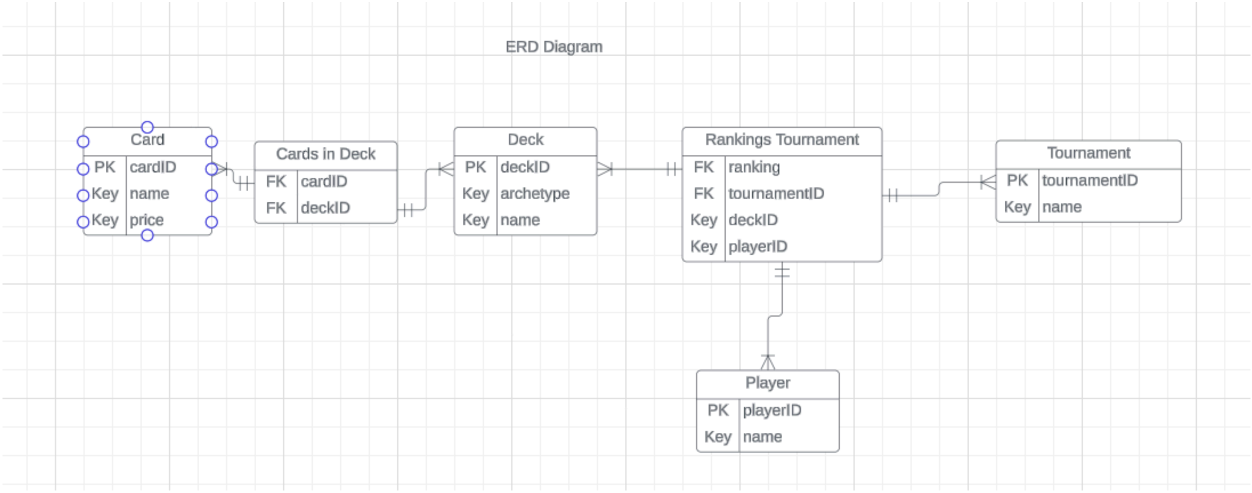
Rules of Database:

1. Tournament can have any number of players and players are ranked from 1 going up to however many players there are
2. Multiple players may use the same deck in one tournament
3. All decks fit into the archetypes of either Control, Aggro, or Midrange
4. Players may enter as many tournaments as they want

UML Diagram:



ERD Diagram:



Relational schema:

Card(<u>cardID: INT</u>, name: TEXT UNIQUE, price: INT)

Deck(<u>deckID: INT</u>, archetype: TEXT, name: TEXT)

Tournament(<u>tournamentID: INT</u>, name: TEXT)

Player(<u>playerID: INT</u>, name: TEXT)

Cards in Deck(cardID: INT, deckID: INT)

Rankings Tournament(<u>deckID: INT, tournamentID: INT</u>, rankings: INT)

Definition of BCNF:

A table is in BCNF if:

1. Every attribute is related to the primary key(s)
2. Each attribute is directly related to the table and only stored once
3. Attributes that can be found through queries aren't stored
4. Changing one attribute doesn't impact others

Card: name and price based on cardID, no attributes from queries, attributes are independent
Deck: archetype and name based on deckID, no attributes from queries, attributes are independent

Tournament: name based on tournamentID, no attributes from queries, attributes are independent

Player: name based on playerID, no attributes from queries, attributes are independent

Cards in Deck: only composed of Foreign Keys. no attributes from queries, attributes are independent

Rankings Tournament: no attributes from queries, attributes are independent