Project Name

Since our web application is an inventory-type manager for Magic: The Gathering (MTG), we've chosen the simple, self-explanatory name of
Magic: The Gathering Inventory Manager.

Team Member Names

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Abstract

MTG is a game with complicated decks and numerous cards. As of early 2026, there are over 27,000 unique MTG cards with distinct names. This excludes reprints, alternate art versions, foreign language prints, and special variants. This means managing inventories is a challenging task that can be too much for one person to keep track of, making it easy to build less efficient decks or miss cards. By having an inventory manager such as this, players can easily view their cards and create their own decks without struggling with physical management.

Tools & Technologies

Visual Studio Code
- Free to use and well maintained IDE.

Scryfall API
- Free to use and is updated every 12 hours to keep accuracy.

Supabase
- Free backend and database tool

Vercel
- Free deployment tool

React
- Free development tool

NextJS
-React framework

GitHub

- Free version tool

Requirements List

1. Login

1.1. A login is required to use any function beyond searching the whole card database.
- 1.1.1. Guest users can only access the homepage and search.
- 1.1.2. Authenticated users can access all features.
- 1.1.3. Navigating to the inventory or deck pages as a guest redirects to login
  - 1.1.3.1. Upon cancelling the login, the user will be redirected to the homepage.

1.2. A login button will be visible when an individual is navigating as a guest.
- 1.2.1. Visible in the navigation bar only when the user is not signed in.

1.3. Upon clicking the login button, a Google login pop-up will appear using Supabase's Google login framework.

1.4. If Supabase returns a failure for Google auth:
- 1.4.1. An error will be displayed to the user.
- 1.4.2. Two buttons will be displayed to the user:
  - 1.4.2.1. One will allow the user to try logging in again.
  - 1.4.2.2. The second will allow the user to cancel and continue as a guest.

1.5. If Supabase validates the Google account:
- 1.5.1. If the Google account is linked to an existing account:
  - 1.5.1.1. It will be verified by the unique identifier in the database.
  - 1.5.1.2. User data will be loaded.
  - 1.5.1.3. The user will be signed in and redirected
    - 1.5.1.3.1. They will be directed to the homepage if clicking the login button from there.
    - 1.5.1.3.2. They will be directed to the deck or inventory page if they had been trying to navigate there and were prompted to sign in.
  - 1.5.1.4. The Login button will be replaced with a Profile button.
    - 1.5.1.4.1. See Section 3.2 for Profile details.
- 1.5.2. If the Google account is not linked to an existing account:
  - 1.5.2.1. A unique numeric identifier will be created to recognize the account in the database.
  - 1.5.2.2. A default avatar will be assigned to the user.
  - 1.5.2.3. The user will then be directed to the homepage.
  - 1.5.2.4. The login button will be replaced with a profile button.

2. Homepage

2.1. There will be a navigation bar
  2.1.1. See Section 3 for Navigation Bar details.
2.2. The page will display a limited number of cards on the screen.
  2.2.1. Upon reaching this limit, a show more button will be visible.
    2.2.1.1. On click, it will show 50 more cards
  2.2.2. The cards will be initially sorted alphabetically.
  2.2.3. The cards displayed will be images of the cards retrieved from Scryfall API.
  2.2.4. Users will be able to scroll through the cards displayed.
  2.2.5. When clicking a card, the card's information will be displayed.
    2.2.5.1. See Section 8 for Card Information Page details.
2.3. There will be filters for the user to select.
  2.3.1. See Search Function for more details.
2.4. When receiving information from Scryfall, an indicator will be displayed.
2.5. If the Scryfall API fails, an error message will be displayed.
  2.5.1. A dialog box will appear alerting the user of an error.
  2.5.2. Information will continue to try to be retrieved.

3. Navigation Bar

3.1. There will be an input box for the Search Function.
  3.1.1. See Section 4 for Search Function details.
3.2. If the user is signed in, there will be a profile icon consisting of the user's avatar.
  3.2.1. On Click, it will bring up a sub menu.
    3.2.1.1. Displays current avatar.
    3.2.1.2. Displays email.
    3.2.1.3. A small number of clickable avatar options.
      3.2.1.3.1. Upon clicking one, the avatar will be immediately updated.
    3.2.1.4. Button for Log Out.
      3.2.1.4.1. On click, "Are you sure" message will pop up.
        3.2.1.4.1.1. Clicking "No" cancels it.
        3.2.1.4.1.2. Clicking "Yes" logs the user out.
          3.2.1.4.1.2.1. Brings the user to the default homepage as a guest.
  3.2.2. The submenu closes if:
    3.2.2.1. The user clicks outside of the submenu.
3.3. If the user is not signed in, there will be a Login button.

3.3.1. On click, it will redirect the user to sign in.
3.3.2. See Section 1 for Login details.
3.4. There will be a button called “Homepage”.
3.4.1. On click, the user will be directed to the homepage.
3.4.1.1. Regardless if they are navigating as a guest or are signed in.
3.4.2. See Section 2 for Homepage details.
3.5. There will be a button called “Decks”.
3.5.1. If the user is not signed in, they are redirected to login on click.
3.5.1.1. See Section 1 for Login details.
3.5.1.2. If they sign in, they are redirected to the Decks page.
3.5.1.3. If they do not sign in, they are redirected to the homepage as a guest.
3.5.2. If the user is signed in, it brings them to the Deck Page on click.
3.5.2.1. See Section 6 for Deck Page details.
3.6. There will be a button called “Inventory”.
3.6.1. If the user is not signed in, they are redirected to login on click.
3.6.1.1. See Section 1 for Login details.
3.6.1.2. If they sign in, they are redirected to the Inventory page.
3.6.1.3. If they do not sign in, they are redirected to the homepage as a guest.
3.6.2. If the user is signed in, on click it brings them to the Inventory Page.
3.6.2.1. See Section 5 for Inventory Page details.

4. Search Function

4.1. The search functionality will allow users to search the database of cards.
4.1.1. Each instance of the search box will utilize a text box.
4.1.2. How will the search happen? As it goes (don’t recommend) or do they hit enter (I vote this)? Is there a button they need to click?
4.2. The search function will exist in the nav bar for simple searches and as its own page.
4.3. Functionality will change based on what page the user accesses this feature from.
4.3.1. Search Page is the default mode.
4.3.1.1. This page will include a menu that contains the text box for the search function, as well as textboxes and drop downs for various toggles and filters to allow for a simple way to search through the database.
4.3.1.1.1. These filters will include: mana value, card type, subtype, power, toughness.
4.3.1.1.1.1. This list is not exhaustive and is subject to change.

4.3.1.1.2. Numeric filters will include a box to select whether the input is meant to be greater, lesser, or equal to the target.
4.3.1.1.3. This menu will contain a box to change modes for filters.
4.3.1.1.3.1. Modes will determine whether tags should be included or excluded from the search.
4.3.1.1.4. All filters will be capable of being written as tags within the search bar itself to maintain advanced functionality outside of the dedicated search page.
4.3.1.1.5. The menu will also contain a dropdown box that adjusts how the cards displayed are sorted.
4.3.1.1.5.1. The default sort is alphabetical
4.3.1.1.5.2. Other sorts will be based on numerical or data of cards such as power, toughness, or mana.
4.3.1.1.6. This menu can be collapsed or hidden.
4.3.1.2. This page also has a display of cards that fit the given search
4.3.1.2.1. This display is dynamic and will display cards in a different layout based on the width of the screen viewing the display and whether or not the menu is collapsed.
4.3.1.2.2. Clicking on an image from you brings you to the relevant card's page
4.3.2. The search bar on a Deck page has a unique function that allows for users to quickly add cards to their deck.
4.3.2.1. Cards do not need to be in the user's inventory to be added in this way.
4.3.3. The search function in the card information page will allow the user to search for a card using its name.
4.3.3.1. If a card matches the text in the box, it will bring the user directly to the specific cards page.
4.3.3.2. If a card matching the input is not found, the user is directed to the search page which will display results that potentially match.

5. Inventory Page

5.1. Inventories will be saved per account
5.1.1. See Section 8.3 for Inventory Data details.
5.2. Editing Inventory
5.2.1. Adding new cards
5.2.1.1. See Section 7.7 for adding cards to inventory details.
5.2.2. Removing cards
5.2.2.1. See Section 7.8 for removing cards from inventory details.

5.2.3. Editing decks
5.2.3.1. See Section 7.5 for details on adding cards to a deck.
5.2.3.2. See Section 7.6 for details on removing cards from a deck.
5.3. The inventory utilizes the search page to sift through cards in the user's collection.
5.3.1. See Section 4.3.1 for Search Function details.
5.3.2. These cards are stored in a table that contains a card's ID, quantity owned, and quantity in use.
5.3.3. The inventory will exist as a toggle or tag for the search function and will not be its own page.
5.3.4. This page will also display any decks the user has registered to their inventory
5.3.4.1. Similar to a card, clicking a deck brings the user to the relevant deck's page
5.4. Decks page
5.4.1. The deck page is a subset of the inventory page that views from an even more restricted pool of data.
5.4.1.1. Many of the filters that apply to cards only are disabled when viewing from this source
5.4.1.1.1. Only colors and names will remain functional
5.4.2. The user will not see any cards while utilizing this filter
5.4.3. This page is accessible from the navbar
5.4.4. From this page the user can create decks
5.4.4.1. The deck creation field consists of a textbox and a button
5.4.4.1.1. Text box referred to a the name field
5.4.4.1.1.1. When this textbox is empty, "create deck" button will be disabled.
5.4.4.1.2. Button is labelled "create deck", which will add a deck to the user's inventory.

6. Deck Page

6.1. The deck page will display the contents of a given deck saved to a user's inventory
6.1.1. Decks will be stored within the web app's database as their own table.
6.1.1.1. Said table will consist of the following columns: DeckID, DeckName, DeckColors, Format, and a CardListId.
6.1.1.1.1. CardListID works to Join a card by its ID with a Deck that contains it.
6.1.1.2. Decks are saved by the user and the User table.

6.2. The user will be able to remove cards from the deck via a dropdown on the page
6.3. The user will be able to delete the deck itself from this page
    6.3.1. This is done via a button
    6.3.2. If the button is clicked a popup alert will ask the user to confirm they wish to delete the case
        6.3.2.1. If confirmation is selected the deck is removed.
        6.3.2.2. If cancel is selected the process is stopped.
6.4. The deck page will allow for a dynamic display of cards.
    6.4.1. Cards will be displayed by default as stacks fitting in a category.
        6.4.1.1. Default categories are the card types of magic the gathering.
            6.4.1.1.1. Card types: Artifact, Battle, Creature, Enchantment, Instant, Kindred, Land, Planeswalker, and Sorcery.
        6.4.1.2. The user will be able to change how the stacks are assorted via different stats such as mana the mana value of the card.
    6.4.2. Users will be allowed to assign cards to categories
        6.4.2.1. Example optional categories: Draw, Stax, Removal, etc.
6.5. The Deck page will have a summary of the deck's data
    6.5.1. Summary data includes: Average mana value including or excluding lands, the number of cards at each mana value, and a total number of cards.
        6.5.1.1. This list is not exhaustive and has potential to change.
        6.5.1.2. The count of cards will also display how many cards are in the user's inventory.
6.6. The Deck page will include a modified search bar.
    6.6.1. This search bar will function as a quick add feature that allows users to search a card only by name and add it directly to the deck.

7. Card Information Page

7.1. Displays an HD image of the card.
7.2. Text will display how many of this card the user owns as well as the number of copies currently in the user's decks.
7.3. Displays the Information on the Cardokay,
    7.3.1. Text showing the card's name.
    7.3.2. Images showing the mana cost.
    7.3.3. Text displays the card's type and subtypes
        7.3.3.1. Super types will be displayed in the same segment when applicable.
    7.3.4. Text will state the set and rarity of the card.
        7.3.4.1. This text will include the collector number if applicable
    7.3.5. Text containing all rules text of the card.

7.3.6. Text displaying the artist's name.
7.3.7. Text displaying the cards Power/Toughness.
7.3.7.1. Only displays when applicable.
7.3.8. Text displaying the cards flavor text.
7.3.8.1. Only displays when applicable.
7.4. Shows the legality of the card
7.4.1. Displays legality status for supported formats (Commander and Standard).
7.4.1.1. Illegal will show "Not Legal"
7.4.1.2. Legal will show "Legal"
7.5. Button for adding cards to the deck
7.5.1. This button will not be visible if the user is not signed in.
7.5.2. On click, will bring up a menu allowing the user to choose the deck/decks.
7.5.2.1. User will be prompted with a "Confirm" or "Cancel" button
7.5.2.1.1. On click of "Confirm" adds the card to the deck/decks.
7.5.2.1.2. On click of "Cancel" will do nothing and close the deck menu.
7.6. Button for removing cards from the deck
7.6.1. This will not be visible if the user is not signed in.
7.6.2. On click, it will bring up a menu showing decks the card is in.
7.6.3. The user can select one or more decks to remove the card from.
7.6.4. The user will be prompted with a "Confirm" or "Cancel" button.
7.6.4.1. On click of "Confirm" adds the card to the deck/decks.
7.6.4.2. On click of "Cancel" will do nothing and close the deck menu.
7.7. Button for adding to Inventory
7.7.1. This button will not be visible if the user is not signed in.
7.7.2. On click of add button will add card
7.7.2.1. Increase the Owned quantity by 1
7.8. Button to remove from inventory
7.8.1. When clicked, the quantity of cards will be decreased by one.
7.8.2. This button is not visible if the user does not have any copies of said card in their inventory.
7.8.3. This button will not be visible if the user is not signed in.

8. Database

8.1. User Data
8.1.1. Each user will have a unique id
8.1.2. It will store the email address associated with each user
8.2. Card Data
8.2.1. It will store the name of the cards

8.2.2. It will store the color(s) of the cards
8.2.3. It will store the mana cost of the card
8.2.4. It will store the card's type
8.2.4.1. It will store the card's subtype (if needed)
8.2.5. It will store the card rarity
8.2.6. It will store the card's set code
8.2.7. It will store the card image URL
8.2.8. It will store the card's legality information for supported formats

8.3. Inventory Data
8.3.1. It will store inventory records linked to the user's unique id
8.3.1.1. Within the user's inventory the name of each card
8.3.1.2. Within the user's inventory the number of each one card
8.3.1.2.1. The number of times this card is in a deck
8.3.2. Will update total number of cards in an inventory
8.3.2.1. Update number when a card is added to a deck
8.3.2.2. Update number when a card is removed from a deck
8.3.2.3. Update number when a card is removed from the user's inventory

8.4. Deck Data
8.4.1. It will store a unique id for each deck
8.4.2. It will store information about each deck
8.4.2.1. Deck name
8.4.2.2. Color(s)