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CS490: Dart/Flutter

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Munchkin Marvel: Combat Calculator

**Background:**

Munchkin is a free-for-all card game designed by Steve Jackson Games. In 2016, a Marvel-themed version of the game was released. In Munchkin Marvel, players use cards representing the heroes, powers, equipment, affiliations, and items of the Marvel universe to defeat popular villains. Players start at level one and may advance a level or two by defeating a villain. The first player to reach level 10 will win the game. An overview video can be watched here: [*How to Play: Munchkin Marvel Edition by USAopoly*](https://www.youtube.com/watch?v=B4tmN6hTR0s)

**Problem:**

The combat system in Munchkin Marvel is simple at first, but can quickly snowball in difficulty when each player has more than a handful of cards. When a player encounters a villain, their combat strength is calculated from their current level, companions, powers, gear, affiliations, and boost cards. Not only is the value of each card added together, but the special effects of every card, villain, and environment must be taken into account for other additions or deductions in strength. In the beginning, players can quickly calculate their combat strength, but it may take up to a few minutes to do finalize calculations around the average midway point or near the end.

**Proposal:**

The Munchkin Marvel Combat Calculator, or M2-C2, is a mobile application that will calculate a player’s combat strength against a specific villain card. It will be developed using Flutter and Dart, allowing the application to be available on iOS and Android devices.

Users can set up their current profile, specifying which cards they have ready for combat. The program will initially calculate their base combat strength from each card. Before combat begins, the user will select the villain they’re facing, along with the battle environment (if applicable). After that, the program will take into account of the special effect of each card in combat before displaying the player’s final combat value.

**Planned Feature List:**

1. Base Game Cards
2. Expansion 1 (Mystic Mayhem) Cards
3. Expansion 2 (Cosmos Chaos) Cards
4. Player Profile and Level Display
5. Card Management
6. Base Combat Value Calculator
7. Special Effects Calculator

**Feature Descriptions:**

1. The program will have information on the 174 cards that came with the base game. This will include their name, card type, combat value (if applicable), and description, which indicates its special effects (if applicable). Having information on these cards will be a much bigger priority over the two later expansions. The card types are:
   * Agents
   * Heroes
   * Powers
   * Affiliations
   * Items (divided into one-use cards and wearable equipment)
   * Villains
   * Traps
2. The first expansion will be stored. It introduced 102 new cards, including the new environment card type. Environment cards simply indicate where the players are currently located and the special effects that applies to the entities in the game.
3. The second expansion, which introduced an additional set of 102 cards, will be stored.
4. The player’s name, agent card, agent’s gender, and level can be displayed. The agent card is essentially the player’s controlled character. Each agent has their own special effect. The agent’s gender is stored because there are cards that affect specific genders differently.
5. Users can manage their inventory, indicating which cards they have in combat and which cards are out of combat. The calculator will acknowledge cards in play and ignore the effects of ones outside of play.
6. Most cards have a combat value that will be added to or deducted from the player’s combat strength. The program will detect the cards in combat and calculate the player’s combat strength based on the cards’ combat values alone.
7. Once the villain and environment (if applicable) has been selected, the program will acknowledge the special effects of each card in combat to calculate and display the player’s final combat strength.