# Final Card-Down Rules

The Cards

There are 800 cards in the traditional deck for *Final Card-Down*. Each card has a *suit*, *color*, and a *value* and there are two of each kind of card.

There are 16 *values* that a card can have, one for each value from **0** to **F** in hexadecimal; **0** may also be referred to as **NULL**. There are five suits; **hearts**, **diamonds**, **clubs**, **spades**, and **questions**. There are five colors; **red**, **blue**, **green**, **yellow**, and **purple**.
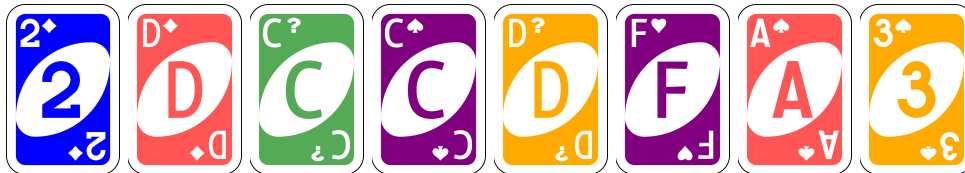
The Start of Play

At the start of the game, the deck is shuffled. From the deck, each player is dealt 7 cards. The first card goes to the first player, the second to the second player, the third to the third player, the fourth to the fourth player, the fifth to the first player, and so on, until each player has 7 cards. These 7 cards form the players *hand*. The top card on the deck is then removed and placed facing up, starting the discard pile. The rest of the deck becomes the draw pile.

Playing the Game

Each player takes a *turn*.

1. During a *turn* a player may make one of the following *actions*:
   - Play a card (and discharge it on the top of the discard pile):
     - with the same *value*, *suit* or *color* (adjusted for a case where the last player played "D" and might have changed color, see below)
     - with a value of *NULL* (value of 0).
   - Draw a card from the draw pile.
   - End turn.

2. If the value of the Play card is
   - **2**, the next player must either draw two cards from the deck into their hand or play another card with a value of **2**. If they play a 2, they draw

no cards and the player after them must draw 4 cards. Cards with a value of **2** may be stacked on each other increasing the number of cards to be drawn by 2 until a player can not place down a **2** card.

- **A**, the next player's turn is skipped,
- **D**, the player may declare the color that the next card played must have (instead of the color of the card they played).

3. If the value of a card played by the player in the previous turn is **not** "2", the (current) player needs to either play a card (that satisfies the game rules) OR drawn a card, followed by end of the turn. If the value of a card played by the player in the previous turn is **equal to** "2", the (current) player can play another card with a value of "2" OR needs to draw two or more cards depending on the number of consecutive cards with value "2" at the top of the discard pile. The function "`getNumberOfTwoCardsAtTop`" (in `Game.h`) returns number of consecutive cards with value "2" at the top of the discard pile. For example, if there are two consecutive cards with value "2" at the top of the discard pile, the player needs to either play another card with value "2" OR draw four cards, followed by end of the turn. Read the above rule for more detail.

4. If there are no cards remaining in the draw pile, then the current discard pile is collected and inverted to become the draw pile. The discard pile does not need to be shuffled when turning it into the draw pile. The first card that was played into the discard pile will become the first card to be drawn from the draw pile.

5. If the **first card in the discard pile at the start** of the game is a special card, the card will have the effect that it usually had:

- If the initial discard pile card has *value* **2**, the first player must draw two cards (or play a card with value "2" from his/her hand).
- If the initial discard pile card is **A**, the first player is skipped and it becomes the second player's turn.
- If the initial discard pile card is **D**, nothing special happens, the card is treated like any other card (you can match on suit, color, or value).

You must carefully **read comments** in the header file (API) `Game.h`, in particular for the function `isValidMove`.

Winning the Game and Scoring

A player's score at any point in the game is the sum of the cards in their hand.

The game ends when a player places their *final card down* onto the discard pile, leaving them with an empty hand.

This means that as soon as the player places their card down, the game ends. The player does not need to declare the end of their turn for the game to end.