

Magic: The Gathering Database Documentation

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1 Philosophy of Design

write something about why we did the things we did.

Note: Datatypes are SQLite datatypes of the following: INTEGER, TEXT, BLOB, REAL, or NUMERIC.

2 Tables

2.1 CARD

A CARD represents a real, physical, entity in Magic: The Gathering (MTG). CARDS have attributes (described below) that appear as printed images or text on the playing face of the CARD. These attributes give CARDS different playable characteristics in a game.

CARDS may or may not be grouped by these attributes. One example are all CARDS with they type creature, which represent all creature cards. Note that under these attributes, a CARD can be uniquely identified by its name, but a CARD may be reprinted in more than one SET. In other words, a CARD doesn't change between SETs and can be contained within one or more SETs.

2.1.1 Attributes

- card_name
 - **description:** The name of the card.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- text
 - **description:** Everything in the text area of the card.
 - **data type:** TEXT
 - **domain:** Any valid card text.
- type
 - **description:** The type of the card (creature, artifact, etc).
 - **data type:** TEXT
 - **domain:** Any valid magic card type.
- supertype
 - **description:** The super type of the card (legendary, snow, etc).
 - **data type:** TEXT
 - **domain:** Any valid magic card supertype.

- power
 - **description:** The card’s power.
 - **data type:** INTEGER
 - **domain:** Any non-negative integer.
- toughness
 - **description:** The card’s toughness.
 - **data type:** INTEGER
 - **domain:** Any non-negative integer.
- loyalty
 - **description:** The card’s loyalty.
 - **data type:** INTEGER
 - **domain:** Any non-negative integer.

2.2 SET

A SET represents a real, physical, collection of CARDS that are released together and designed for the same play environment. SETs are released through the year and each have a name, code (three character abbreviation) and a set symbol which is not tracked.

2.2.1 Attributes

- set_code
 - **description:** The alphanumeric code associated with a set.
 - **data type:** TEXT
 - **domain:** Combinations of letters and digits.
- set_name
 - **description:** The name of the set.
 - **data type:** TEXT
 - **domain:** Any valid set name.
- year
 - **description:** The year the set was released.
 - **data type:** INTEGER
 - **domain:** Any valid year.
- set_type
 - **description:** The type of set it is (Core, expansion, etc).
 - **data type:** TEXT
 - **domain:** Any valid set type.

2.3 FORMAT

A FORMAT is representation of a set of rules and allowable SETs for deck construction and gameplay. These restrictions define what a FORMAT is, and each FORMAT has a unique name.

2.3.1 Attributes

- `format_name`
 - **description:** The name of the format.
 - **data type:** TEXT
 - **domain:** Any valid format name.
- `min_deck_size`
 - **description:** The minimum number of cards allowed in a deck.
 - **data type:** INTEGER
 - **domain:** Any non-negative integer.
- `max_deck_size`
 - **description:** The maximum number of cards allowed in a deck.
 - **data type:** Integer.
 - **domain:** Any integer, negative integers are interpreted as infinity.
- `copies_allowed`
 - **description:** The maximum number of copies of a card allowed in a deck.
 - **data type:** INTEGER
 - **domain:** Any non-negative integer.

2.4 IS_ALLOWED

IS_ALLOWED represents a many-to-many relationship between SETs and FORMATS. A SET can either be allowed or not allowed in a particular FORMAT. Each SET can be allowed or not allowed in one or more FORMATS. Each FORMAT can allow or not allow one or more SETs.

2.4.1 Attributes

- `set_code`
 - **description:** A foreign key from SET.
 - **data type:** TEXT

- **domain:** Combinations of letters and digits.
- `format_name`
 - **description:** A foreign key from FORMAT.
 - **data type:** TEXT
 - **domain:** Any valid format name.

2.5 CONTAINS

CONTAINS represents a one-to-many relationship between CARDS and SETs. A CARD can be printed or reprinted in one or more SETs, but each SET can only contain one printing of that CARD in the SET (no duplicates in a SET). Note that each CARD must be printed or reprinted with the release of a SET. In other words, each CARD is part of at least one SET.

2.5.1 Attributes

- `set_code`
 - **description:** A foreign key from SET.
 - **data type:** TEXT
 - **domain:** Combinations of letters and digits.
- `card_name`
 - **description:** A foreign key from CARD.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- `rarity`
 - **description:** The rarity of the card (common, uncommon, etc).
 - **data type:** TEXT
 - **domain:** Any valid magic card rarity.

2.6 LIMITATION

A LIMITATION represents a many-to-many relationship between CARD and FORMAT. The limitation or restriction of a CARD to a particular FORMAT is determined by the particular rules of the FORMAT. FORMATS can deem particular CARDS banned (not allowed in gameplay), restricted (only one copy of CARD is allowed in a deck), or illegal (CARD is not allowed).

2.6.1 Attributes

- `format_name`
 - **description:** A foreign key from `FORMAT`.
 - **data type:** `TEXT`
 - **domain:** Any valid format name.
- `card_name`
 - **description:** A foreign key from `CARD`.
 - **data type:** `TEXT`
 - **domain:** Any valid card name.
- `limitation_type`
 - **description:** The way in which a card is limited (banned, restricted, etc).
 - **data type:** `TEXT`
 - **domain:** Any valid limitation.

2.7 COLOR

`COLOR` represents a multivalued property that each card in MTG has. `CARD` `COLOR` is primarily associated with the casting cost of the `CARD` and the text of the `CARD`. If a `COLOR` shows up in the casting cost, then the `CARD` inherits that `COLOR`. If any text in the `CARD` references a `COLOR` in some manner, then the additional `COLOR` information is considered in this table.

2.7.1 Attributes

- `card_name`
 - **description:** A foreign key from `CARD`.
 - **data type:** `TEXT`
 - **domain:** Any valid card name.
- `color`
 - **description:** The color a card is associated with, usually indicated by the physical color of the card.
 - **data type:** `TEXT`
 - **domain:** Any valid magic card color.

2.8 COLOR_COST

COLOR_COST represents symbols on a CARD indicating the cost of casting the CARD. On a physical CARD, this can be a combination of integers and symbols which represent color. Symbols are represented in this table with letters. R for red, U for blue, G for green, B for black, W for white. X represents casting costs with no required color.

2.8.1 Attributes

- `card_name`
 - **description:** A foreign key from CARD.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- `cost_string`
 - **description:** An alphanumeric representation of a cards mana cost.
 - **data type:** TEXT
 - **domain:** Strings over the alphabet $\Sigma = \{R, U, G, B, W, X, \phi\}$ where $\phi \in \mathbb{Z}_{>0}$ and each string that contains ϕ begins with ϕ .
- `converted_cost`
 - **description:** The sum over a cards mana cost. Each occurrence of

Table 1: How to sum a cost_string.

Σ	value
<i>R</i>	1
<i>U</i>	1
<i>G</i>	1
<i>B</i>	1
<i>W</i>	1
<i>X</i>	0
ϕ	ϕ

a character in a cost_string is summed according to the above table.

- **data type:** INTEGER
- **domain:** Any non-negative integer.

2.9 DOUBLE_CARD

description

2.9.1 Attributes

- side_a
 - **description:** A foreign key from CARD, specifically a card_name.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- side_b
 - **description:** A foreign key from CARD, specifically a card_name.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- set_code
 - **description:** A foreign key from SET.
 - **data type:** TEXT
 - **domain:** Combinations of letters and digits.

2.10 SUBTYPE

description

2.10.1 Attributes

- card_name
 - **description:** A foreign key from CARD.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- subtype
 - **description:** The subtype of the card (equipment, curse, etc).
 - **data type:** TEXT
 - **domain:** Any valid magic card subtype.

2.11 COLOR_IDENTITY

description

2.11.1 Attributes

- card_name
 - **description:** A foreign key from CARD.
 - **data type:** TEXT
 - **domain:** Any valid card name.
- red
 - **description:** A flag to indicate the cards alignment with red.
 - **data type:** BOOLEAN
 - **domain:** Any valid boolean.
- blue
 - **description:** A flag to indicate the cards alignment with blue.
 - **data type:** BOOLEAN
 - **domain:** Any valid boolean.
- green
 - **description:** A flag to indicate the cards alignment with green.
 - **data type:** BOOLEAN
 - **domain:** Any valid boolean.
- white
 - **description:** A flag to indicate the cards alignment with white.
 - **data type:** BOOLEAN
 - **domain:** Any valid boolean.
- black
 - **description:** A flag to indicate the cards alignment with black.
 - **data type:** BOOLEAN
 - **domain:** Any valid boolean.
- colorless
 - **description:** A flag to indicate the cards alignment with colorless.
 - **data type:** BOOLEAN
 - **domain:** Any valid boolean.