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01.

Cryptocurrencies (Entity)

{Attributes: crypto_id, name, symbol, date_created}

Marketcap (Entity)

{Attributes: market_id, name, marketcap_value, ath}

- ALL Attributes: [crypto_id, name, symbol, date_created, market_id, name, marketcap_value, ath]

Here Attribute, “name” is same for both tables we can put only one attribute in one of the entities.

- FD set:

{crypto_id -> name, crypto_id -> symbol, crypto_id -> date_created, crypto_id -> market_id, crypto_id -> marketcap_value, crypto_id -> ath}

Here, {crypto_id} → {name} is a non-trivial functional dependency because name(dependent) is not a subset of crypto_id (determinant).

- Candidate Key:

{crypto_id}

- To convert it in third normal form, we will decompose the relation into

  Cryptocurrencies (crypto_id, name, symbol, date_created)

  Exchange (exchange_id, crypto_id, country)

  Users (user_id, crypto_id, user_name)

  Marketcap (market_id, crypto_id, marketcap_value, ath)

  Prices (price_id, crypto_id, price, value_date)

  Wallets (wallet_id, crypto_id, address, name_tag)

Exchange(crypto_id) references Cryptocurrencies(crypto_id)

Users(crypto_id) references Cryptocurrencies(crypto_id)

Marketcap(crypto_id) references Cryptocurrencies(crypto_id)

Prices(crypto_id) references Cryptocurrencies(crypto_id)

Wallets(crypto_id) references Cryptocurrencies(crypto_id)