Project Report - Milestone 1

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March 2023

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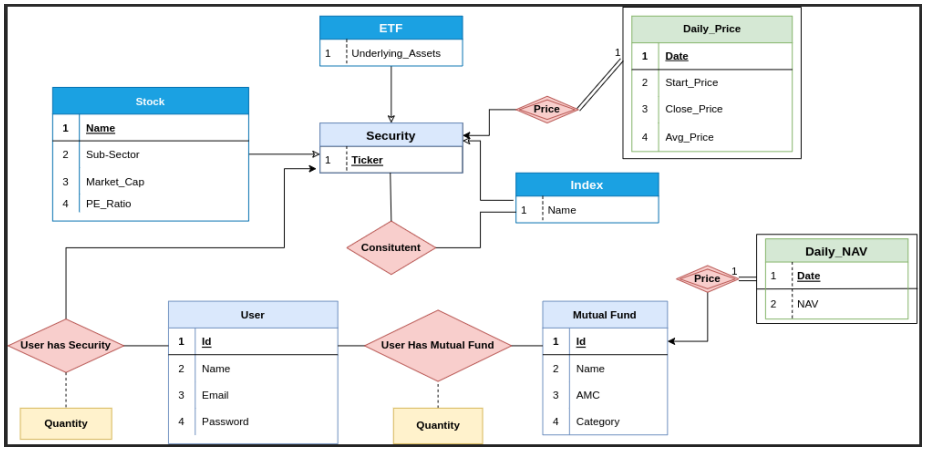
1 ER Diagram



2 Relational Schema

1. *stock(ticker, name, sector, market_cap, pe_ratio)*
2. *etf(ticker, underlying_asset)*
3. *index(ticker, name)*
4. *constituent(security_ticker, index_ticker)*
5. *daily_price(ticker, date, open_price, close_price, avg_price)*
6. *mutual_fund(id,name, amc, category)*
7. *daily_nav(mf_id, date, nav)*
8. *user(id, name, email, password)*
9. *user_has_mf(user_id, mf_id, quantity)*
10. *user_has_security(user_id, ticker, quantity)*

3 Functional Dependencies

In each table, the specified key functionally determines all the other attributes.

1. (a) ticker → name, sector, market_cap, pe_ratio
   (b) name → ticker, sector, market_cap, pe_ratio
2. ticker → underlying_asset

3. (a) ticker → name
   (b) name → ticker
5. ticker, date → open_price, close_price, avg_price
6. (a) id→ name,amc, category
   (b) name→ id,amc, category
7. mf_id,date→ nav
8. id → name, email, password
9. user_id, mf_id → quantity
10. user_id, ticker → quantity

4 Normalization

All functional dependencies listed above are in the **Boyce-Codd normal form**. The reason is, that each functional dependency given above left-hand side is a candidate key
Hence, the above listed schema is the normalised final schema.

5 GitHub Repository

Link