Mutual Fund Portfolio360 Project – Technical Architecture

# 1. Models

## 1.1 Staging Models (All Materialized as Views)

stg\_investor  
stg\_fund  
stg\_nav  
stg\_transaction

## 1.2 Mart Models (Business Layer)

Structured as folders: mart/investor, mart/fund, mart/monitoring

### mart/investor

mart\_investor\_portfolio\_summary (incremental, SCD1)  
mart\_investor\_fund\_holdings (incremental, SCD1)  
mart\_investor\_transaction\_history (view)  
mart\_investor\_growth\_trend (table)  
mart\_investor\_risk\_profile (view)  
mart\_investor\_kyc\_status (incremental, SCD1)

### mart/fund

mart\_fund\_performance\_summary (incremental, SCD1)  
mart\_fund\_nav\_timeseries (table)  
mart\_fund\_category\_performance (view)  
mart\_fund\_investor\_distribution (view)

### mart/monitoring

mart\_transaction\_anomalies (table)  
mart\_nav\_anomaly\_flags (table)  
mart\_data\_freshness\_status (incremental)

# 2. Tests (Singular / Custom)

nav\_no\_future\_dates.sql  
invalid\_transaction\_units.sql  
duplicate\_transactions.sql  
unmapped\_transactions.sql  
nav\_large\_drop.sql  
snapshot\_overlap\_check.sql  
snapshot\_multiple\_current\_versions.sql  
invalid\_validity\_range.sql  
no\_change\_but\_new\_version.sql  
transaction\_anomalies\_not\_expected.sql  
data\_freshness\_check.sql

# 3. Snapshots

snapshot\_investor  
snapshot\_fund  
snapshot\_nav  
snapshot\_investor\_kyc

# 4. Seed Files

fund\_category\_lookup.csv  
txn\_type\_mapping.csv  
amc\_master.csv  
kyc\_status\_reference.csv  
nav\_anomaly\_thresholds.csv

# 5. Macros

calc\_nav\_growth(nav\_current, nav\_previous)  
safe\_divide(numerator, denominator)  
txn\_type\_label(txn\_code)  
date\_filter(column, days\_back=30)  
investor\_risk\_label(equity\_pct)

✅ Macros can be reused inside staging or mart models to avoid duplication.

# 6. Recommended dbt Packages

dbt-utils  
dbt-date (for calendar or date logic)  
dbt-expectations (if extended testing is needed)

# 7. Additional Suggestions

- Use tags like 'snapshot\_test', 'anomaly\_check' for grouped test execution  
- Add freshness checks on external sources using dbt source freshness  
- Use dbt docs for lineage and documentation  
- Add source descriptions in schema.yml for clarity