**IV. Investment Portfolio (Version 1, Version 2)**

**Tables and Attributes**

1. **Investor**  
   ○ **investor\_id**: INT, Primary Key, Auto Increment.  
   ○ **full\_name**: VARCHAR(100), Not Null.  
   ○ **email**: VARCHAR(150), Unique, Not Null.  
   ○ **phone\_number**: VARCHAR(20), Unique, Not Null.  
   ○ **address**: TEXT.  
   ○ **risk\_tolerance**: ENUM('Low', 'Medium', 'High'), Default 'Medium'.  
   ○ **created\_at**: TIMESTAMP, Default CURRENT\_TIMESTAMP.
2. **Portfolio**  
   ○ **portfolio\_id**: INT, Primary Key, Auto Increment.  
   ○ **investor\_id**: INT, Foreign Key (Investor.investor\_id), On Delete CASCADE.  
   ○ **portfolio\_name**: VARCHAR(100), Not Null.  
   ○ **initial\_investment**: DECIMAL(15, 2), Not Null.  
   ○ **created\_at**: TIMESTAMP, Default CURRENT\_TIMESTAMP.  
   ○ **status**: ENUM('Active', 'Inactive'), Default 'Active'.
3. **Asset**  
   ○ **asset\_id**: INT, Primary Key, Auto Increment.  
   ○ **asset\_name**: VARCHAR(100), Not Null.  
   ○ **asset\_type**: ENUM('Stock', 'Bond', 'ETF', 'Real Estate', 'Cryptocurrency'), Not Null.  
   ○ **market\_value**: DECIMAL(15, 2), Not Null.  
   ○ **risk\_level**: ENUM('Low', 'Medium', 'High'), Not Null.  
   ○ **created\_at**: TIMESTAMP, Default CURRENT\_TIMESTAMP.
4. **Portfolio\_Asset**  
   ○ **portfolio\_id**: INT, Foreign Key (Portfolio.portfolio\_id), On Delete CASCADE.  
   ○ **asset\_id**: INT, Foreign Key (Asset.asset\_id), On Delete CASCADE.  
   ○ **units\_owned**: DECIMAL(12, 4), Not Null.  
   ○ **purchase\_price**: DECIMAL(15, 2), Not Null.  
   ○ **current\_value**: DECIMAL(15, 2), Not Null.  
   ○ **last\_updated**: TIMESTAMP, Default CURRENT\_TIMESTAMP.  
   ○ Primary Key: (**portfolio\_id**, **asset\_id**).
5. **Transaction**  
   ○ **transaction\_id**: INT, Primary Key, Auto Increment.  
   ○ **portfolio\_id**: INT, Foreign Key (Portfolio.portfolio\_id), On Delete CASCADE.  
   ○ **asset\_id**: INT, Foreign Key (Asset.asset\_id), On Delete CASCADE.  
   ○ **transaction\_type**: ENUM('Buy', 'Sell'), Not Null.  
   ○ **transaction\_date**: DATE, Not Null.  
   ○ **units**: DECIMAL(12, 4), Not Null.  
   ○ **price\_per\_unit**: DECIMAL(15, 2), Not Null.  
   ○ **total\_value**: DECIMAL(15, 2), Not Null.
6. **Market\_History**  
   ○ **history\_id**: INT, Primary Key, Auto Increment.  
   ○ **asset\_id**: INT, Foreign Key (Asset.asset\_id), On Delete CASCADE.  
   ○ **date**: DATE, Not Null.  
   ○ **market\_value**: DECIMAL(15, 2), Not Null.

**Table Relationships**  
● **Investor ↔ Portfolio**: One-to-Many (An investor can have multiple portfolios).  
● **Portfolio ↔ Portfolio\_Asset**: One-to-Many (A portfolio can contain multiple assets).  
● **Portfolio\_Asset ↔ Asset**: Many-to-One (Multiple portfolio-asset mappings can reference the same asset).  
● **Portfolio ↔ Transaction**: One-to-Many (A portfolio can have multiple transactions).  
● **Transaction ↔ Asset**: Many-to-One (A transaction involves a single asset).  
● **Asset ↔ Market\_History**: One-to-Many (An asset can have multiple market history entries).