# Asset Management System
## Lab 1

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# 1 Problem Statement

An asset management company needs an efficient and reliable database system to manage its diverse range of financial services and client portfolios. The company handles numerous clients, each with multiple investment accounts, and offers various financial products like mutual funds, stocks, bonds . The database system should facilitate the seamless management of client information, investment transactions, and financial reports. The objective is to ensure data integrity, quick access to information, and support for complex queries and reporting.

# 2 Functionality

The system should provide the following functionalities:

1. **User Registration and Authentication:**

   - Users can register and log in.
   - Roles include investor, portfolio manager, and admin with different access levels.

2. **Portfolio Management:**

   - Users can create and manage portfolios.
   - Track asset performance within portfolios.
   - Update asset details and portfolio allocations.

3. **Investment Tracking:**

   - View detailed reports on investments.
   - Track historical data and trends.

4. **Transaction Management:**

   - Record buy/sell transactions and track the history.
   - Generate statements.

5. **Performance Analysis:**

   - Generate performance reports and metrics.
   - Compare portfolio performance with benchmarks.

6. **Customer Support:**

   - Provide users with a system to raise support tickets.
   - Track and resolve support tickets.

7. **Admin Features:**

   - Manage user accounts and access.
   - Access to all portfolios and transactions.
   - Generate administrative reports.

# 3 Database Requirements

The updated database schema consists of the following tables and attributes:

## 3.1 Tables

- **USER:**
  Attributes: UserID (PK), Username, Password, Role, E-mail

- **POSITION:**
  Attributes: UserID (PK), Role, Access

- **PORTFOLIO:**
  Attributes: PortfolioID (PK), UserID (FK), PortfolioName, CreationDate

- **ASSET:**
  Attributes: AssetID (PK), AssetName, CurrentValue, Proposition, Unit

- **TRANSACTION:**
  Attributes: TransactionID (PK), PortfolioID (FK), AssetID (FK), TransactionType, Amount, Time

- **PERFORMANCE REPORT:**
  Attributes: ReportID (PK), PortfolioID (FK), ReportDate, PerformanceMetrics (P&L, Invested, CurrentValue)

- **PERFORMENCE METRICES:**
  Attributes: ReportID(PK), UserID(FK), Current Value, Invested, P And L

- **SUPPORT TICKET:**
  Attributes: TicketID (PK), UserID (FK), Issue, Status, CreationTime

- **ADMIN LOG:**
  Attributes: LogID (PK), UserID (FK), ActionType, ActionDate

# 4 User Roles

- **User (Investor):**
  - Can view and manage portfolios.
  - Track investment performance and history.
  - Raise support tickets.

- **Portfolio Manager:**
  - Manage multiple portfolios.
  - Approve transactions and view detailed reports.

- **Admin:**
  - Full control over user accounts and system settings.
  - Generate administrative reports and logs.