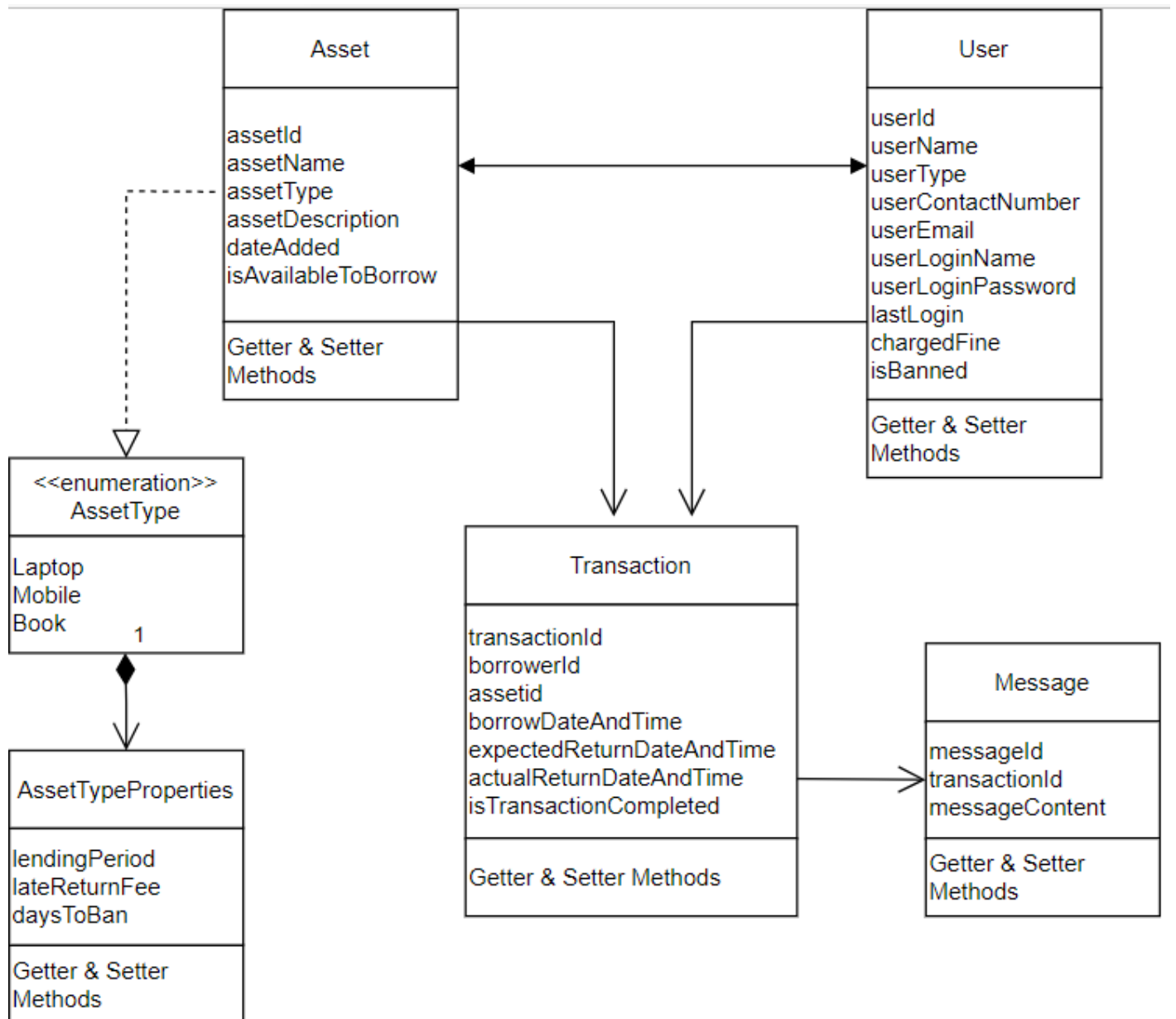
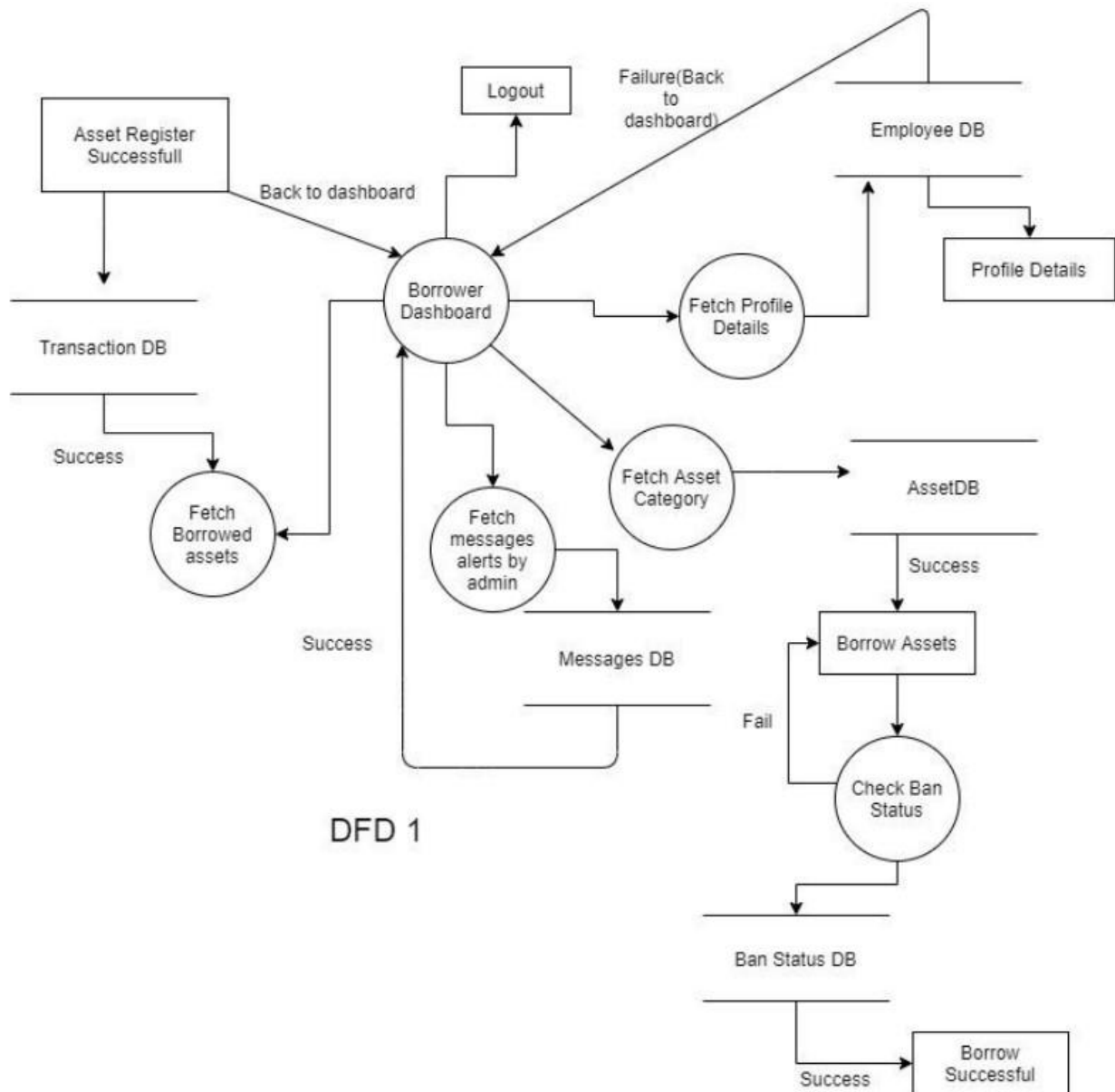


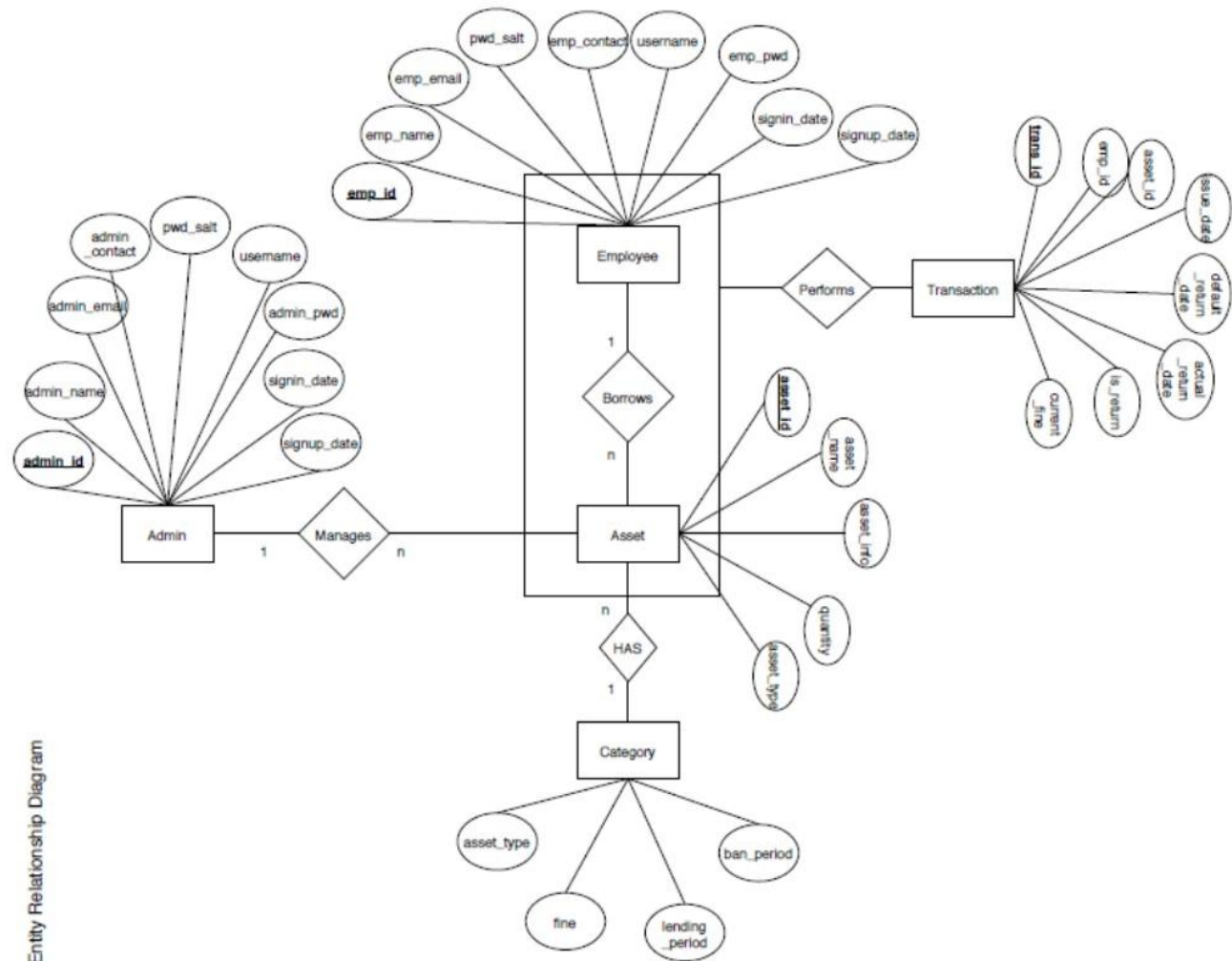
## Class/UML Diagram:



## Data Flow Diagram:



## Entity Relationship Diagram:



## DB DESIGN:

This schema represents a database for managing electronic assets (e-assets) and their transactions. Here's an overview of the schema, including table details and relationships:

### 1. eassets Schema:

- This is the schema where all the tables for managing electronic assets are created.

### 2. assettypes Table:

- Contains information about different types of electronic assets.
- Columns:
  - `assetTypeId` (Primary Key): Unique identifier for asset types.
  - `name`: Name of the asset type.
  - `lendingPeriod`: The period for which an asset can be lent.
  - `lateFee`: The late fee associated with returning an asset late.
  - `daysToBan`: The number of days it takes for a user to be banned for late returns.

### 3. roles Table:

- Stores information about user roles.
- Columns:
  - `roleId` (Primary Key): Unique identifier for roles.
  - `roleName`: Name of the role.

### 4. users Table:

- Contains user details.
- Columns:
  - `userId` (Primary Key): Unique identifier for users.
  - `name`: User's name.
  - `contactNumber`: User's contact number.
  - `emailId`: User's email address.
  - `loginName`: User's login name.
  - `loginPassword`: User's login password (Note: Passwords should be securely hashed in practice).
  - `chargedFine`: Amount of charged fine.
  - `isBanned`: Indicates if the user is banned.
  - `roleId` (Foreign Key): References the `roles` table to determine the user's role.

### 5. assets Table:

- Contains information about electronic assets.
- Columns:
  - `assetId` (Primary Key): Unique identifier for assets.
  - `assetName`: Name of the asset.
  - `description`: Description of the asset.

- `isAvailable`: Indicates if the asset is available for lending.
- `systemAddedDate`: Date and time when the asset was added to the system.
- `assetTypeId` (Foreign Key): References the `assettypes` table to determine the asset's type.

#### 6. **transactions Table:**

- Stores transaction details related to asset lending.
- Columns:
  - `id` (Primary Key): Unique identifier for transactions.
  - `assetId` (Foreign Key): References the `assets` table to identify the borrowed asset.
  - `borrowDate`: Date and time when the asset was borrowed.
  - `expReturnDate`: Expected return date.
  - `actualReturnDate`: Actual return date.
  - `isTransactionCompleted`: Indicates if the transaction is completed.
  - `userId` (Foreign Key): References the `users` table to identify the user involved in the transaction.

#### 7. **messages Table:**

- Stores messages related to transactions.
- Columns:
  - `Id` (Primary Key): Unique identifier for messages.
  - `messageContent`: Content of the message.

#### 8. **transactionmessages Table:**

- Represents a many-to-many relationship between transactions and messages.
- Columns:
  - `Id` (Primary Key): Unique identifier for transaction messages.
  - `transactionId` (Foreign Key): References the `transactions` table.
  - `messageId` (Foreign Key): References the `messages` table.