Banking Application

Basic Overview of Repo

This repo contains code for ORM models like SavingsAccount, User, Permissions and Checking Account. You need to create models as required.

The user can sign up for both a checking account or a savings account or both. Savings account functionality is as general. For Checking account there are four types of accounts. First is D where he has no overdraft limit. When the user signs up for Checking account he gets D account type by default. C account type has 250$ overdraft limit, B has 500$ and A has 1000$ overdraftlimit. An Admin can uplift/downgrade the type of checking account to one of the types and will take effect from Next transaction.

For checking account, if balance is less, it can take remaining money from Overdraft facility and withdraw amount surpasses amount available in the checking account + the overdraft, transaction is declined.

Assignment 1: Account Management, Withdrawals/deposits & Authentication

Objective:

- Develop apis for user login, and creation of both the account types. When user creates a checking account by default, it will be of D type
- Create a default user on app startup who is an Admin. He can uplift account type since he has required permissions.
- Create Apis for withdrawal and deposit of balance in Savings account
- Create Apis for withdrawal and deposit of balance in Checking account. If balance is insufficient it checks with the overdraft limit.
- Create test cases for a workflow where a user signs up and creates a checking account. His account is uplifted by an admin to type A. He has a balance of only 100$ but he is able to withdraw 800$ since he has overdraft facility.

Details:

1. Create apis for signup of the user, login and account creation
    a. Apis for Signup login of the user, and creation of Accounts both Savings and checking account
2. At the start of the app, an admin is created who has all the permissions(are also created) present in the app.
3. Apis for Admin to upgrade or downgrade the account type of the user.
4. Apis for deposit and withdrawal of balance from all kinds of account types.
5. Create test cases for a workflow where a user signs up and creates a checking account. His account is uplifted by an admin to type A. He has a balance of only 100$ but he is able to withdraw 800$ since he has overdraft facility.
6. . JWT Token Mechanism for User Roles:
    a. Implement JSON Web Tokens (JWT) for user authentication.
    b. Define an Admin and a normal User Role
    c. Only Admin can upgrade the account type of a checking account.
7. Bonus Test Cases:
    a. Write other test cases for important workflows to increase code coverage.

Evaluation Criteria:

- Successful implementation of APIs

- API Documentation

- Proper handling of user roles and permissions.

- Code quality and adherence to best practices.

Assignment 2: Generate Unit Test cases

Objective

Application should be well covered and tested using unit test cases. Make sure there will be at least 80% code coverage.

Detailed Assignment

1. Write unit test cases by mocking objects as needed
2. Make sure API testing with varied inputs and all edge cases are covered.

End Goal

1. Test coverage reports covering all code
2. Test case execution without failures