Batch 1 Bank Account System

1. Create a new Spring Boot project with the required dependencies for Jasper reports, CRON jobs, email, and Slack integration.
2. Create the necessary entity classes (Account, Customer, Transaction, Loan, and CreditCard) with their respective attributes, annotations, and relationships.
3. Set up the database connection and the necessary repositories for each entity.
4. Create the necessary services to handle the business logic and implement the CRUD operations for each entity.
5. Set up the necessary endpoints to expose the API for each entity.
6. Implement the functionality to generate Jasper reports for the Account, Transaction, and Loan entities.
7. Configure the CRON jobs to run every day at midnight to calculate the daily interest on the loan accounts and update the balances accordingly.
8. Implement the functionality to send email alerts to customers when they make a new transaction or when their account balance falls below a certain threshold.
9. Set up the Slack integration to receive notifications when a new customer signs up or when a loan application is approved or rejected.
10. Test the system thoroughly to ensure that all functionality is working as expected.

Specific Functionalities

Account Entity:

1. Create a new account for a customer.
2. Retrieve the account balance for a specific account.
3. Update the account balance when a transaction is made.
4. Calculate the interest on the account balance.
5. Generate a monthly statement for the account.
6. Retrieve the account history, including all transactions.

Customer Entity:

1. Create a new customer with their personal information.
2. Update the customer information, such as their email or phone number.
3. Retrieve the customer's account information, including all their accounts and their current balances.
4. Apply for a new loan or credit card.
5. View the status of their loan or credit card application.
6. Retrieve the customer's transaction history across all their accounts.

Transaction Entity:

1. Create a new transaction for a specific account.
2. Retrieve the details of a specific transaction.
3. Retrieve all transactions for a specific account.
4. Calculate the fees or charges associated with the transaction.
5. Generate a report of all transactions within a specific time period.
6. Reverse a transaction in case of an error.

Loan Entity:

1. Create a new loan application for a customer.
2. Retrieve the status of a loan application.
3. Approve or reject a loan application based on the customer's creditworthiness.
4. Calculate the interest on the loan and update the balance accordingly.
5. Allow the customer to make payments towards the loan balance.
6. Generate a report of all loan balances and payments.

CreditCard Entity:

1. Create a new credit card application for a customer.
2. Retrieve the status of a credit card application.
3. Approve or reject a credit card application based on the customer's creditworthiness.
4. Allow the customer to make payments towards their credit card balance.
5. Calculate the interest on the credit card balance and update it accordingly.
6. Generate a report of all credit card balances and payments.