

# CAPSTONE PROJECT

DEVELOP AN END-TO-END  
API STRUCTURE USING  
SPRING BOOT



# PROJECT DETAILS

## Create API's for



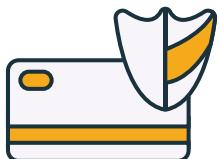
Account Creation in a Bank



Transfer of money from one account to another.



Loading Account Details as per customer



Applying filter on transactions



Applying pagination on the transactions



Safe Logout.

THIS WOULD BE AN INDIVIDUAL PROJECT.

Learn to deploy SSL certificate and integrate logging in the application process.

\*This section will require the candidate to learn about JPA (Java Persistence API) for connecting Spring Boot app to the database which was originally not the part of training and will be covered while doing this Capstone project.

# Day Wise Plan

## Day 1



Topics Covered



Hours

Spring Boot Introduction to JPA 2

Creating Account, Transaction, User and other entities 2

Setting Up PostgreSQL Server and connecting to Spring Boot 1

Installing Swagger for API Documentation 1

API Creation for Account, User and Transactions 2

## Day 2



Topics Covered



Hours

Pagination and Filtering in the API 1

Applying Logs using Sentry Server 1

Integrating SSL Certificate on SpringBoot Server 2

Deploying Spring Boot Application to Production 3

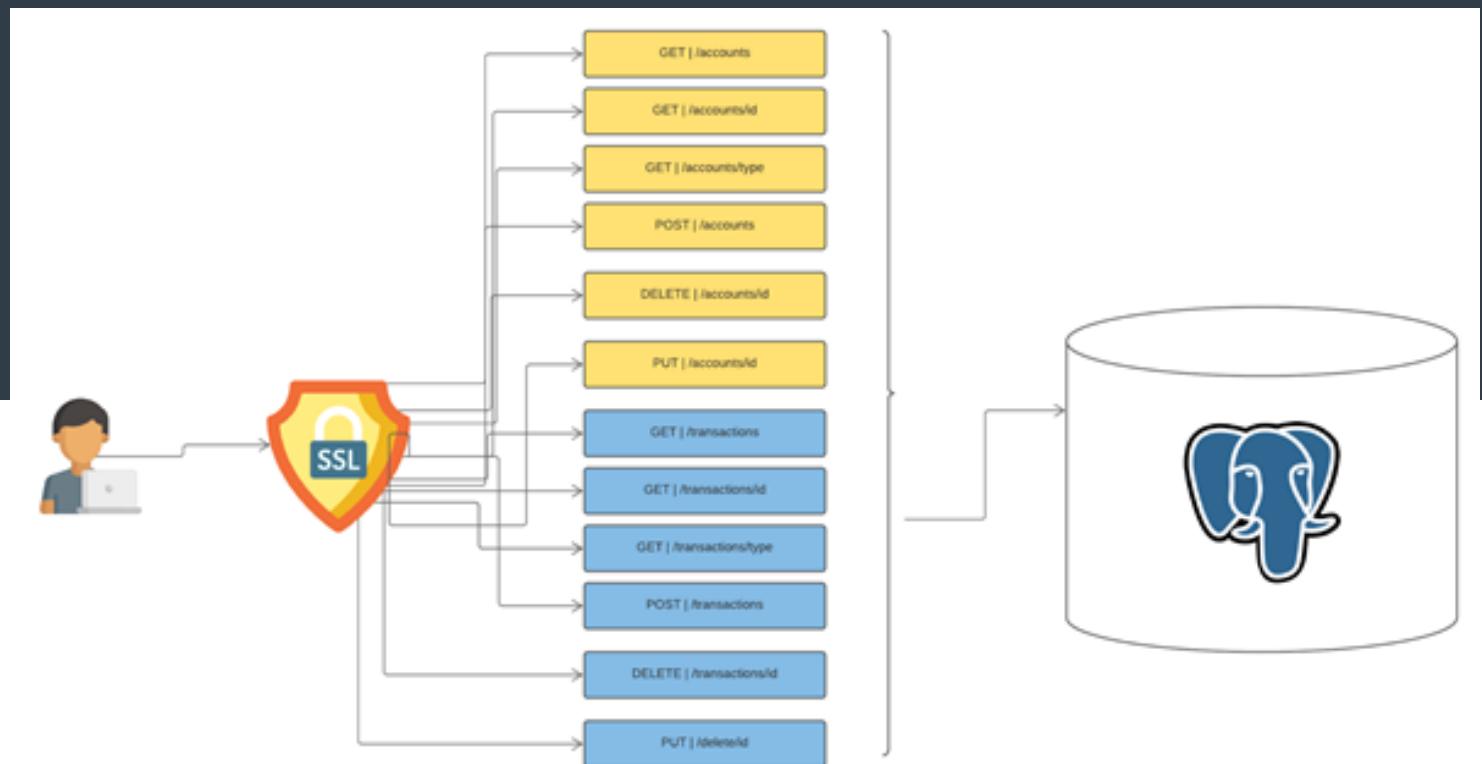
# Project Entities

## 1. Account

- account-number
- name
- gender
- email
- phone
- address
- account-type
- balance
- credit-limit
- creation-date
- last-updated
- status

## 2. Transactions

- transaction-id
- from-account
- to-account
- from-account-name
- to-account-name
- same-bank-transaction [yes|no]
- other bank [in case same bank is no]
- amount
- date
- time
- transaction-type [credit] debit]
- status



**Flow Diagram** [Original Image attached with Email]



## TOOL CHAIN



**Spring Boot**



**PostgreSQL**  
for Database



**keygen tool**  
for Java SSL  
Generation      **Swagger for**  
**API**  
**Documentation**

## Methodology

Make use of Agile methodology to complete the 2 days sprint with a Sprint Retrospective happening at the end of Day 2, on the basis of which evaluation will be completed.



# User Stories



## As a User

- I want to open a bank account so that I can start making transactions.
- I want to update my bank account details so that my bank can contact me any time
- I want to be able to delete my bank account in case I want to shift to another bank
- I want to be able to make a transaction
- I want to be able to update a transaction
- I want to be able to check my transactions based on dates, users, and other important filters



## As an Admin User

- I want to be able to check all the accounts in my bank
- I want to be able to check all the bank account based on its active or non-active status
- I want to be able to check all the bank accounts based on it; type [Savings| Current | Credit]
- I want to be able to check all the transactions for a particular user
- I want to be able to check all the transactions for a date
- I want to be able to delete any wrong transactions.

# Expected Deliverables and Marking System

A candidate will be expected to deploy 7 of the top listed API's other 4-5 will be done by the trainer and candidates will follow them.



## Tasks



### API Deployment (Total 7 to be Completed) 10 marks/ api

Candidates will be awarded 10 marks for successful completion of each API. For example, If a candidate completes 3 API they will be awarded 30 marks

### Clean Coding and Naming Conventions 15 marks

Candidate will be awarded 15 marks for correct implementation of Clean Coding and HTTP Naming conventions to the API

### SSL Deployment 15 marks

Candidates will be awarded 15 marks for successful deployment of SSL Certificate Generated using Java Code to their Spring Boot Project

### Total Marks





Happy Learning