# Technical Document

## Project Title

Find Nearby Banks

## Technology Stack

- Java 17  
- Spring Boot  
- RESTful APIs  
- Google Maps API (Geocoding + Places API)  
- Microservices architecture  
- Maven, Git  
- VS Code or IDE of choice

## System Architecture

This application is divided into two microservices:  
1. Bank Service (port: 8082) - Accepts the user's ZIP code via REST API and delegates processing to the Location Service.  
2. Location Service (port: 8081) - Responsible for:  
 - Converting ZIP code to lat/lng using Geocoding API  
 - Searching for nearby places of type 'bank' using Places API

## API Specification

Endpoint: `/api/banks/nearby?zipcode=10001`  
Method: GET  
Response (example):  
[  
 { "name": "Bank of America", "address": "123 Main St" },  
 { "name": "Chase", "address": "456 Elm St" }  
]

## Google Maps Integration

- Geocoding API: Converts ZIP code to latitude & longitude.  
- Places API: Searches for places of type 'bank' within a 10-mile radius.  
- API key is required and passed via query params or headers.

## How to Run the Application

1. Clone the Git repository.  
2. Run Location Service (`mvn spring-boot:run` on port 8083).  
3. Run Bank Service (`mvn spring-boot:run` on port 8082).  
4. Access the endpoint via browser or Postman:  
`http://localhost:8082/api/banks/nearby?zipcode=10001`  
5. View list of banks returned in JSON.