Project Brief

Project title	**Application Integration – API**
Module Name	**Application Integration (API using Spring Boot & React JS)**
Course Name	**Applied Degree in Software Engineering**
Project Start date	
Project Submission Date	

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1. Purpose of this Project

This assignment gives you an opportunity to demonstrate your capabilities in the following areas:

- Be able to design and develop a backend using Spring Boot and JPA Framework.
- Be able to develop API using Restful Web Services.
- Be able to develop frontend application using React JS.
- Be able to identify existing APIs and its uses in already developed application

2. Project Pre-requisites

You must have completed the Know-Your-Neighbour Application with Spring Security.

You should have access to the Project Brief, Project Report template and Project Presentation template and should understand how to use the templates

You have access to the Project Technical Environment

You should understand the number of milestones and what are the milestones to be presented for each of the Tutoring Session

3. Project Outcomes & Deliverables

You should perform all the tasks in the Project Task List and prepare the following during the project:

4. Project Definition

You have already developed a "Know-Your-Neighborhood" application. The goal of this application is to provide login/sign up using existing API. For this to happen, the application should have login button with available APIs.

The Know-Your-Neighborhood website consists of the following Key pages

1. Home Page
2. Registration Page
3. Login Page with API link
4. Contact us Page
5. About us Page
6. Terms and Conditions Page

Customers can login using the existing API and fetch basic information such as name, email from API.

Scope of the Project

The Scope of the Project is to research of different existing APIs and compare for each of your examples and evaluate their suitability while also identifying any potential security issues and build a login with selected API in existing website.

Overview of the Project

User should be able to perform following functions in the portal,

1. User will be able to login using provided API

2. User need to provide the existing username and password for that API and can login to the application

5. Project Task List

You should perform the following tasks as part of the Project:

Task 1

Create the following items Under **"APIs and Type of APIs"** in Project Presentation

1. Explain what API is, its role and need for API and research existing APIs.
2. Examine the relationship between API and SDK.
3. Identify types of API and its uses.
4. Identify the potential security issues with API and critically evaluate the suitable API for given scenario or your selected application.

Task 2

Create the following items in "**Apply the knowledge of API research to design an application**" Section in Project Report

1. Analyze the given scenario, identify the requirements, and select the suitable API for the same.
2. Develop the relevant wireframes to utilize the API for given purpose.
3. Identify the scope and target platforms.
4. Evaluate and justify the selection of chosen APIs for the application. (Show security of selected APIs.)

Task 3

Create the following items under **"Application Implementation"** in Project Report

1. Introduce three different types of backend, frontend, and API implementation process
2. Discuss a range of suitable development environments for front-end and back-end to develop an application
3. Develop a backend and Web service using selected development environment for given scenario
4. Develop an application that utilizes an API.
5. Construct the application which implements the selected API in Task 2.

Task 4

Create the following items under **"Application Testing"** in Project Report

1. Implement white Box testing for the developed API of your Application
2. Conduct Black Box testing (UAT testing) of your developed application and show the evidence for each test case.
3. Once the testing done check failed test cases and the reason to fail the same and implement your application accordingly.

Task 5

Create the following items under **"Review and Reflect on the APIs Used"** in Project Report

1. Review your developed API, identify the strength and weaknesses of API.
2. Provide data security report of your developed application.

Task 6

1. Provide screen capture of developed application using APIs in Project Presentation

6. Project Evidences

Evidence checklist	Summary of evidence required by student which has to be incorporated in the Project Report
Task 1	"**APIs and Type of APIs**" section in Project Presentation, explaining API and its role and types of API, relationship between API and SDK.
Task 2	Develop the relevant wireframes to utilize the API for given purpose in **"Design an Application"** Section in Project Report
Task 3	Develop an application that utilizes an API and document it under **"Application Implementation"** Section in Project Report.
Task 4	Design and complete white box and black box testing and document it under **"Application Testing"** Section in Project Report
Task 5	Critically evaluate the APIs used within your application and provide a data security report of your application under **"Review and Reflect on the APIs Used"** Section in Project Report
Task 6	Pages developed under Task 3, "Screen Capture of Developed APIs and an Application" in Project Presentation

7. Project Guidelines

You should follow the below guidelines while implementing the Project:

- Implement the project in the technical environment specified in the Project brief
- Follow the format specified for Project Report and Project Presentation
- The project report and presentation should be submitted at least 2 days before the date of Capstone Assessment date

- Present the Milestones in every Tutoring Session and seek the Tutor's feedback and review.
- Incorporate the feedback in your project.
- Attach all project evidence for each milestone as part of your Project report

8. Project Assumptions

You can make following assumptions while implementing the project:

- Existing Login API in KYN application

9. Project Technical Environment

The student should perform the project in the following environment

- Java with Spring Boot
- Apache Tomcat
- MySQL Database
- phpMyAdmin / mysql Client
- Eclipse IDE/ STS
- Notepad / Textpad
- Microsoft Word
- Microsoft PowerPoint
- PostMan
- Visual Studio Code/ Sublime Text
- Note Js
- Axure/Adobe or selected Prototype tools