Software Development Project

Course code: 24F\_CST8319\_450

Facilitator: Moe Osman

Group Assignment

Project Proposal: PACT

***Group 11***

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## Section 1: Project Name

* **PACT** (Planning & Calendar Tool)

## Section 2: Project Category

* **Web Application**

## Section 3: Project Description

“PACT” is a web-based application designed to simplify the process of scheduling appointments. Users can create and manage their available times, allowing others to easily book meetings. The app aims to cut down on the back-and-forth emails and help everyone manage their time more efficiently.

Instead of exchanging multiple emails to find a time that works for both parties, users can check available slots directly in the app and book appointments in just a few clicks. This makes **PACT** ideal for professionals, teams, or businesses that regularly schedule meetings or appointments.

## Section 4: Project Deliverables (Key Features)

* User Registration and Login:Users can create accounts using their email and password. This keeps their data secure and allows them to access their personal settings.
* Availability Settings:Users can select which days and times they are free for meetings.
* Appointment Booking:Other users can view the available time slots and book appointments directly in the app
* User Dashboard:Each user will have a personal dashboard showing their upcoming appointments and allowing them to manage their availability easily.
* Simple User Interface:The app will have a clear and easy-to-use design, making it simple for anyone to navigate and find what they need.

## Section 5: Project Technologies

* **Backend:**
* Java, Servlets, and Apache Tomcat for building the server-side components.
* Spring Boot can be considered for simplifying backend development and creating APIs.
* **Frontend:**
* HTML, CSS to create a responsive, user-friendly interface.
* **Database:**
* JDBC and MySQL for managing user data and appointment information.
* Using Hibernate or JPA for smoother interaction with the database.
* **Design Patterns:**
* Singleton for managing database connections.
* Builder for handling complex object creation, such as user profiles.
* Model-View-Controller (MVC) to keep the logic, interface, and control separated.
* Adapter and Proxy to manage external integrations.

## Section 6: Project Considerations

### Security

* **Primary:** Use HTTPS to keep data secure while being sent and implement JWT for secure logins.
* **Alternative:** Use a service like Auth0 for easier management of user logins and enhanced security features.

### Scalability

* **Primary:** Build the app with a cloud database that can grow with the number of users.
* **Alternative:** Use a microservices architecture with tools like Docker to allow different parts of the app to scale independently.

### Cost

* **Primary:** Costs mainly involve time spent on development and using some third-party services.
* **Alternative:** Use free-tier services for databases and hosting.

## Conclusion

**PACT** is designed to take the hassle out of scheduling by offering an easy-to-use, secure, and scalable platform. With features that allow users to manage their availability and book appointments, **PACT** will improve productivity and simplify time management.