

# Discussion Room Reservations

APC Library

A FINALS PROJECT FOR ENTJAVA

BY GROUP ONE



# What is the APC Library? 📖

- They have **three discussion rooms (A, B, and C)** where APC students can reserve for academic purposes.



# Problem

Statement and Rationale

# Problem Statement

- APC Library is still using **paper forms** for discussion room reservations.
- It is a **manual process** and can be **tedious**.

## Problem Rationale 🤔

- APC students should be able to **make reservations** easily.
- They should know immediately when to make reservations by seeing a **list of existing reservations**.

# Solution

Objective, Idea and Benefits

# Objective

To solve the problem, we must:

- Make the discussion room reservations faster and easier to submit.
- Ease the identification of schedule conflicts when making a reservation.

## Idea

- Provide a centralized web application that digitizes the discussion rooms reservation process.
- APC students would make reservations seamlessly using the web app.
- Conflicting schedule reservations are immediately identified.



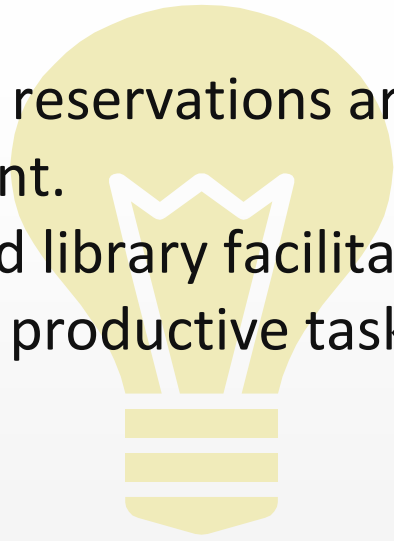


# Java EE

As the foundation of our web application.

## Benefits

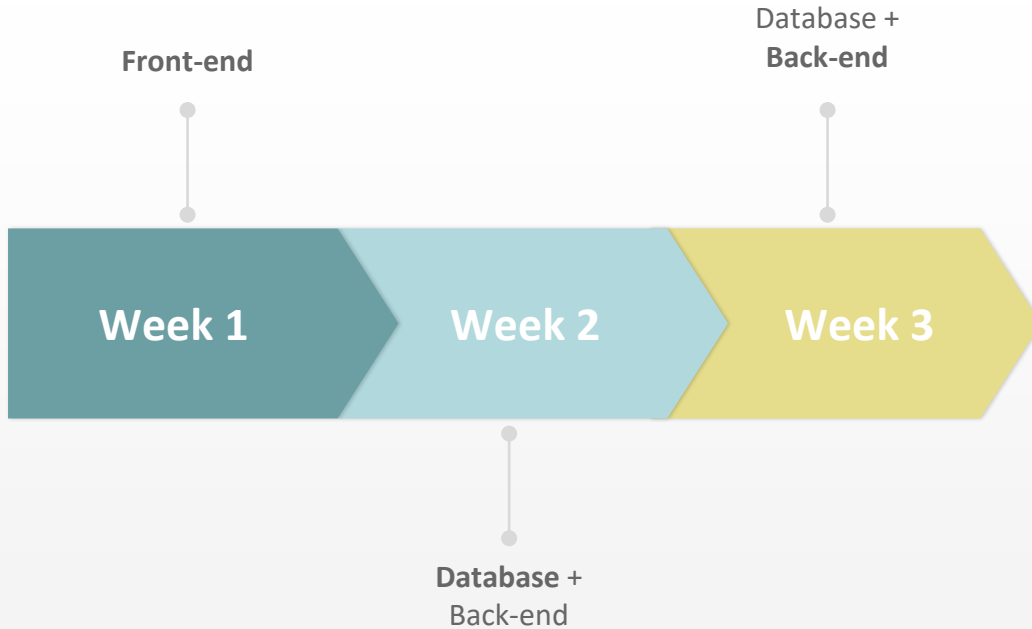
- Discussion room reservations are made much faster and more efficient.
- APC students and library facilitators have more time to allocate in other productive tasks.



# Development

Front-end, Database, and Back-end

# Our Development Timeline



# Front-end

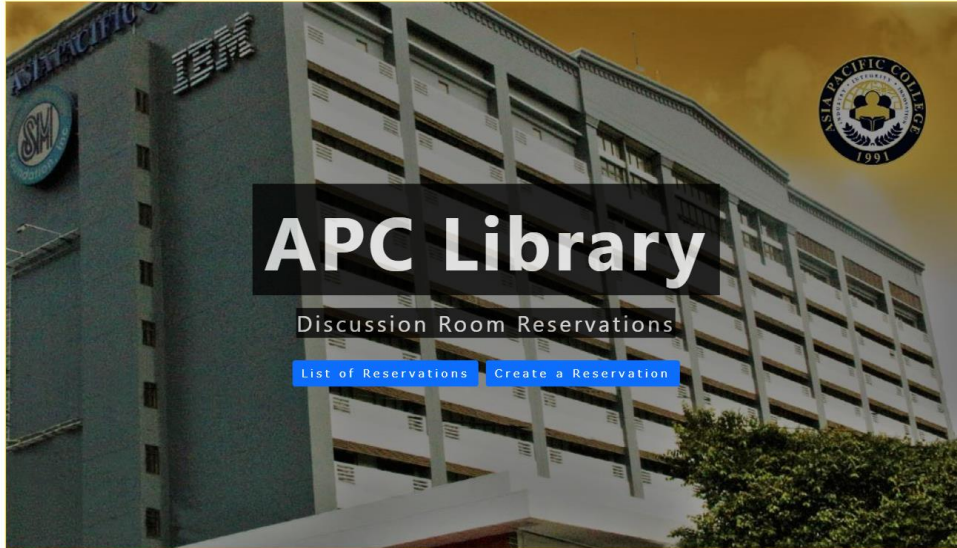
- **Languages and frameworks used**
  - HTML
  - Bootstrap 5
  - W3 school CSS
- **About the design**
  - APC theme
  - Responsive
  - User-friendly



## Front-end

- Converted HTML to XHTML for integration with Java Server Faces.





## List of Reservations

Discussion Room

All Discussion Rooms

### November 12, 2021

**DR-C Meeting for SSYADD**  
07:00 AM to 08:00 AM

**DR-A Org. Fair Planning**  
07:30 AM to 08:30 AM

**DR-C Thesis Defense Preparation**  
08:30 AM to 09:30 AM

**DR-A Brainstorming for PBL Project**  
01:00 PM to 02:00 PM

### November 16, 2021

**DR-B Meeting with JPCS Officers**  
08:30 AM to 09:30 AM



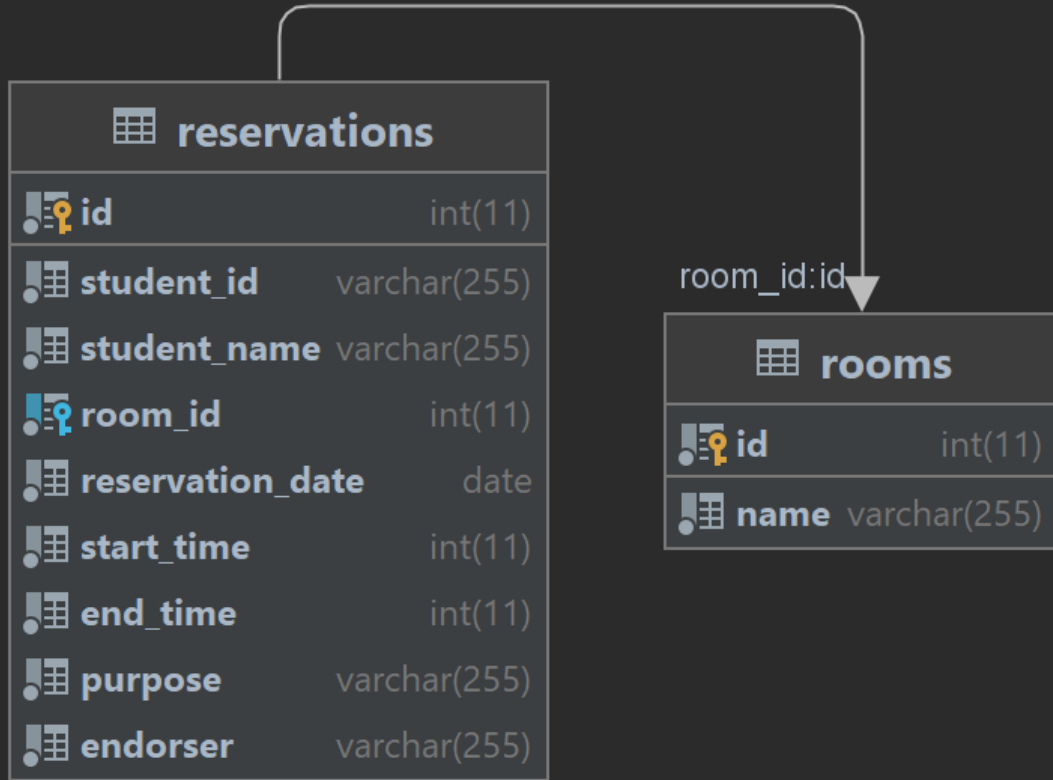
## New Reservation

Student ID 2019-100100	Student Name John Cruz
Discussion Room Discussion Room A	
Date 11/12/2021	
Start Time 1:00 PM	End Time 2:00 PM
Purpose Brainstorming for PBL Project	
Endorser Roselle Wednesday Gardon	
Submit	

## RDBMS

### Entities:

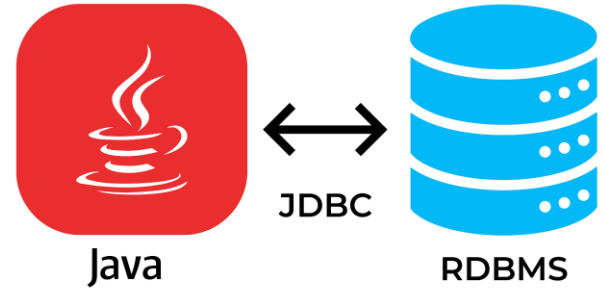
- Reservations
- Rooms



# Database

## Tools used:

- RDBMS: MySQL
- MySQL Server: XAMPP
- JDBC: mysql-connector-java-8.0.19



XAMPP



# WildFly Management Console (JDBC Drivers)



**HAL Management Console**admin123 ▾

HomepageDeployments**Configuration**RuntimePatchingAccess Control

Configuration	Subsystem (31)	Datasources & Drivers	JDBC Driver
Subsystems >	Filter by: name or subtitle	Datasources >	Filter by: driver name or provider type
Interfaces >	Batch	JDBC Drivers >	h2
Socket Bindings >	JBeret		mysql Remove
Paths	Core Management		
System Properties	Datasources & Drivers >		
	Deployment Scanners		
	Discovery		
	Distributable Web		
	EE		
	EJB		

## mysql

The JDBC driver is provided by module `com.mysql`.

### Main Attributes

Driver Class Name:	com.mysql.cj.jdbc.Driver
Driver Datasource Class Name:	
Driver XA Datasource Class Name:	com.mysql.cj.jdbc.MySQLXADataSource
Driver Version:	8.0
JDBC Compliant:	false

3.2.9.FinalTools ^Settings

# WildFly Management Console (Datasource)



**HAL Management Console**admin123

HomepageDeployments**Configuration**RuntimePatchingAccess Control

Configuration	Subsystem (31)	Datasources & Drivers	Datasource
Subsystems >	Filter by: name or subtitle	Datasources >	Filter by: name, xa, .../disabled, dep
Interfaces >	Batch		ExampleDS
Socket Bindings >	JBeret	JDBC Drivers >	
Paths	Core Management		MySQLDS View
System Properties	Datasources & Drivers >		
	Deployment Scanners		
	Discovery		
	Distributable Web		
	EE		
	EJB		

## MySQLDS

Datasource


The datasource **MySQLDS** is enabled. [Disable](#)

### Main Attributes


JNDI Name:	java:/MySQLDS
Driver Name:	mysql
Connection URL:	jdbc:mysql://localhost:3306/reservations
Enabled:	true
Statistics Enabled:	false

3.2.9.FinalTools ^Settings


## Back-end

- Our managed bean is the **ReservationBean** 
- It handles:
  - **Creation** of reservations
  - **Listing** of reservations

# Handling Reservation Creation

- How is it processed:
  - ? Check if required fields are **set**
  - ? Check if reservation **start time != end time**
  - ? Check if reservation **start time < end time**
  - ? Check if reservation has **no schedule conflicts**
  -  Add the reservation!

# Handling Reservation Listing

- How is it processed:
  - ? Check if reservations for a **specific room** are requested
  -  Get all reservations of the **room(s)** for **today** and the **coming days**.




# Handling Schedule Conflicts

	November 11, 2021						
	7:00 AM	7:30 AM	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM
Existing Reservation A (7:00 AM – 8:00 AM)	ST		ET				
Existing Reservation B (8:00 AM – 10:00 AM)			ST				ET
New Reservation (7:30 AM – 8:30 AM)		ST		ET			

# Handling Schedule Conflicts

	November 11, 2021						
	0	30	60	90	120	150	180
Existing Reservation A (7:00 AM – 8:00 AM)	ST	×	ET				
Existing Reservation B (8:00 AM – 10:00 AM)			ST	×			ET
New Reservation (7:30 AM – 8:30 AM)		×		×			

# Handling Schedule Conflicts

- How is it processed:
  - ? Get a list of existing reservations with **same day** and **room** of the requested reservation.
  - ? Check whether **each** existing reservation is **conflicting** with the requested reservation.
  -  Return a list of schedule conflicts.

# Handling Schedule Conflicts

- Pseudocode for checking schedule conflicts:

```
boolean isConflicting(existingReservation, requestedReservation) {  
    if (existingReservation.endTime <= requestedReservation.startTime)  
        return false  
  
    if (requestedReservation.endTime <= existingReservation.startTime)  
        return false  
  
    return true  
}
```

# Demo

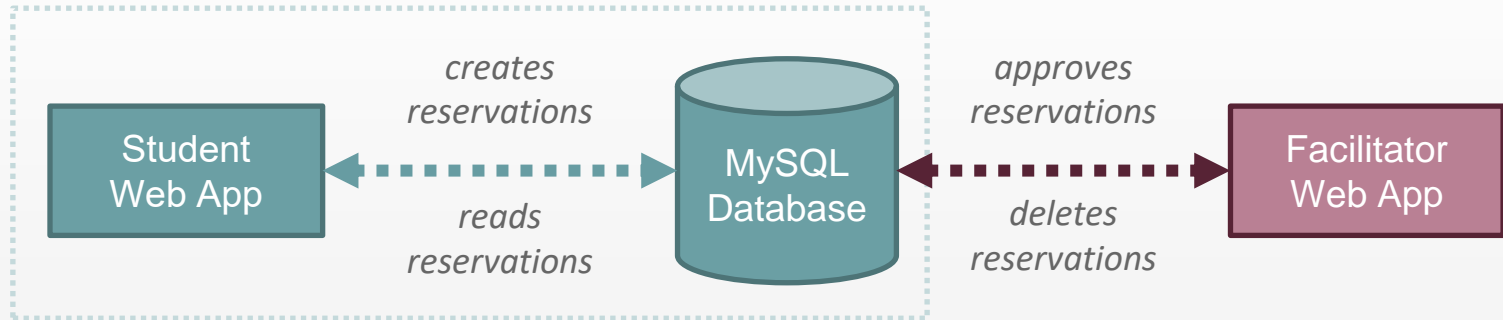
App demonstration

# Recommendations

Moving forward with the app concept

# Recommendations ✨

- Make another web app for the library facilitators to use.





# Thank you!

That concludes our presentation.