SCTR's Pune Institute of Computer Technology Dhankawadi, Pune

A.Y. 2023-24

WADL MINI PROJECT REPORT ON

"Supervision Duties Allotment"

Submitted By

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DEPARTMENT OF INFORMATION TECHNOLOGY

ACADEMIC YEAR 2023-24

ABSTRACT

The Supervision Duties Allotment project aimed to streamline the allocation of supervision duties, create seating arrangements for students, and display information about teachers within the Information Technology department at the Society for Computer Technology & Research's Pune Institute of Computer Technology. Our goal was to ensure efficient supervision, organized seating, and easy access to teacher information.

Utilizing modern technology and considering the necessary hardware and software, we developed a comprehensive system capable of automatically assigning supervision duties, generating seating arrangements, and providing teacher information. The system was designed to be user-friendly and efficient, facilitating the smooth operation of daily activities within the department.

By leveraging technologies such as ReactJS, NodeJS, MongoDB, and Git, we implemented a solution that met the specific requirements outlined by the department. Throughout the project, we encountered challenges such as integrating different components seamlessly and ensuring accurate data representation. However, through collaborative problem-solving and iterative development, we successfully addressed these challenges.

The outcomes of the project signify a significant improvement in the management of supervision duties, student seating arrangements, and teacher information dissemination within the IT department. This report comprehensively details the objectives, methodologies, implementation strategies, outcomes, and lessons learned, providing valuable insights into the project's contributions to the department.

INTRODUCTION

The efficient management of supervision duties, student seating arrangements, and teacher information is essential for the smooth functioning of academic activities within educational institutions. Recognizing the importance of these aspects, the Society for Computer Technology & Research's Pune Institute of Computer Technology initiated the Supervision Duties Allotment project within its Information Technology department.

The primary objective of this project is to develop a comprehensive system that automates the assignment of supervision duties, facilitates the creation of organized seating arrangements for students, and provides easy access to information about teachers. By addressing these key areas, the project aims to enhance the overall efficiency, transparency, and effectiveness of academic operations within the department.

In today's digital age, the adoption of modern technologies plays a crucial role in optimizing processes and improving workflow management. Leveraging advancements in software development and data management, the project endeavours to create a user-friendly and robust system that meets the specific requirements and challenges faced by the IT department.

Throughout this introduction, we will provide an overview of the project's objectives, outline the scope and limitations, and discuss the significance of addressing supervision duties, student seating arrangements, and teacher information management within the educational context. Additionally, we will highlight the methodologies and technologies employed to achieve the project goals, setting the stage for a detailed exploration of the project's implementation and outcomes.

MOTIVATION

The motivation behind the Supervision Duties Allotment project stems from the inherent challenges faced in managing academic responsibilities within the Information Technology department at the Society for Computer Technology & Research's Pune Institute of Computer Technology. As educational institutions strive to provide high-quality learning experiences, the effective allocation of supervision duties, organization of student seating arrangements, and accessibility of teacher information emerge as critical factors influencing the efficiency and success of academic operations.

One of the primary motivations for this project is to address the manual and time-consuming nature of supervision duties allotment, which often leads to inefficiencies, inconsistencies, and oversight. By automating this process, we aim to streamline task assignment, ensure equitable distribution of responsibilities, and enhance accountability among teaching and lab assistants.

Moreover, the project seeks to tackle the challenges associated with student seating arrangements, which can often be chaotic and prone to confusion. Through the implementation of a systematic approach to seating allocation, we aim to create an environment conducive to learning, minimize disruptions, and optimize space utilization within classrooms and laboratories.

Additionally, providing easy access to information about teachers is crucial for fostering effective communication and collaboration within the academic community. By centralizing teacher information and making it readily accessible, we aim to empower students, staff, and administrators with the resources they need to support their educational endeavours.

IMPLEMENTATION DETAILS

Frontend Development:

- React and Material-UI:

  React is used to create reusable components, manage state, and handle the application's view layer.
  Material-UI provides pre-built React components following the Material Design guidelines, offering a consistent and visually appealing UI.

- Sidebar Navigation:

  Implemented using Material-UI's Drawer component or similar UI elements.
  Each tab (Faculty, Schedule, Seating Arrangement) corresponds to a separate page or component within the application.

- Faculty Tab:

  Fetches teacher data from the backend API using Axios or a similar HTTP client library.
  Displays a list of teachers along with their information, such as name, department, contact details, etc.
  Utilizes Material-UI components for styling and layout.

- Schedule Generation Tab:

  Provides a form for users to input details such as date, time, subject, classroom, etc.
  Sends the form data to the backend API endpoint using Axios.
  Receives and displays the generated supervision schedule for teachers.

- Seating Arrangement Tab:

  Allows users to view and manage seating arrangements for students.
  Displays seating layouts for classrooms or specific events.
  Provides functionality to assign seats to students and adjust seating arrangements as needed.

Backend Development:

- Node.js and Express.js:

  Node.js powers the backend server, while Express.js is used to create RESTful APIs and handle HTTP requests.
  Routes are defined to handle requests related to faculty, schedules, seating arrangements, etc.

- MongoDB:

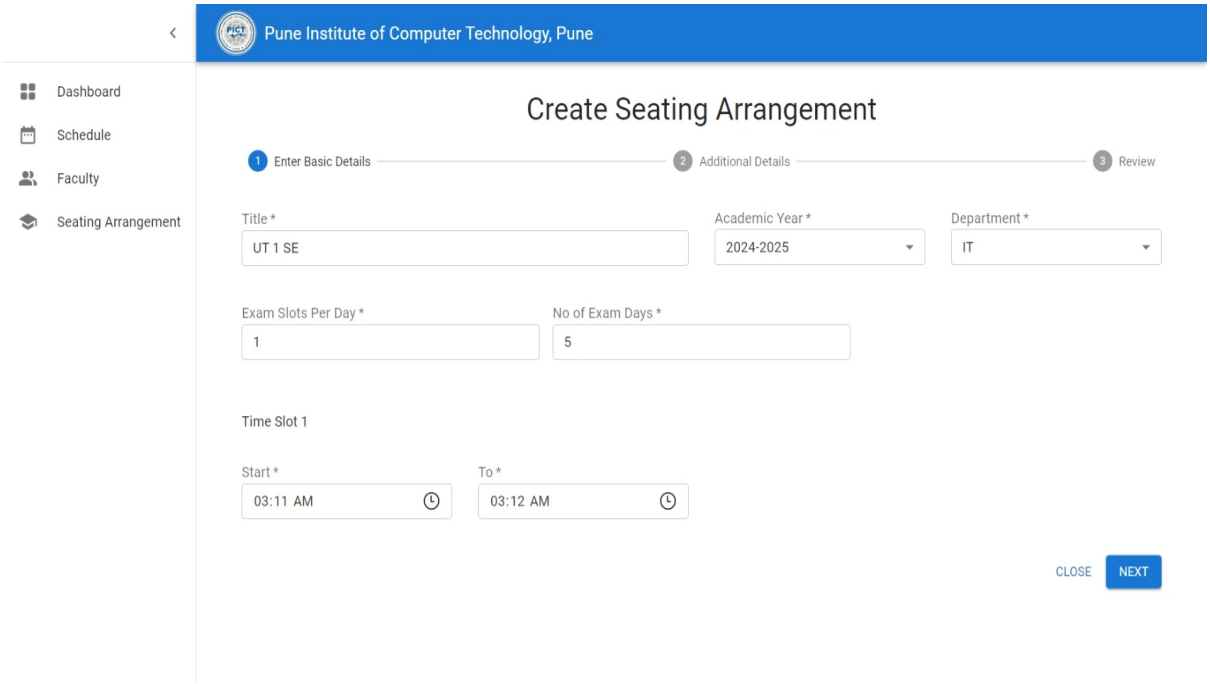
  Stores data related to teachers, schedules, seating arrangements, etc., in a NoSQL format.
  Schemas and models are defined using Mongoose to interact with MongoDB.

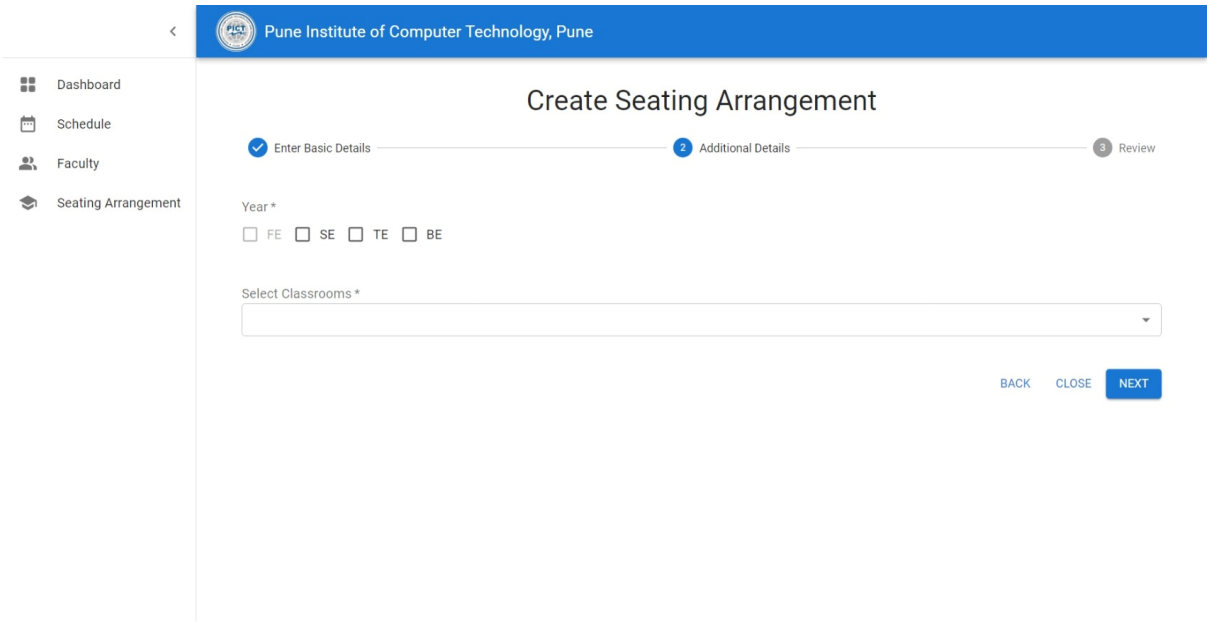
- Dependencies:

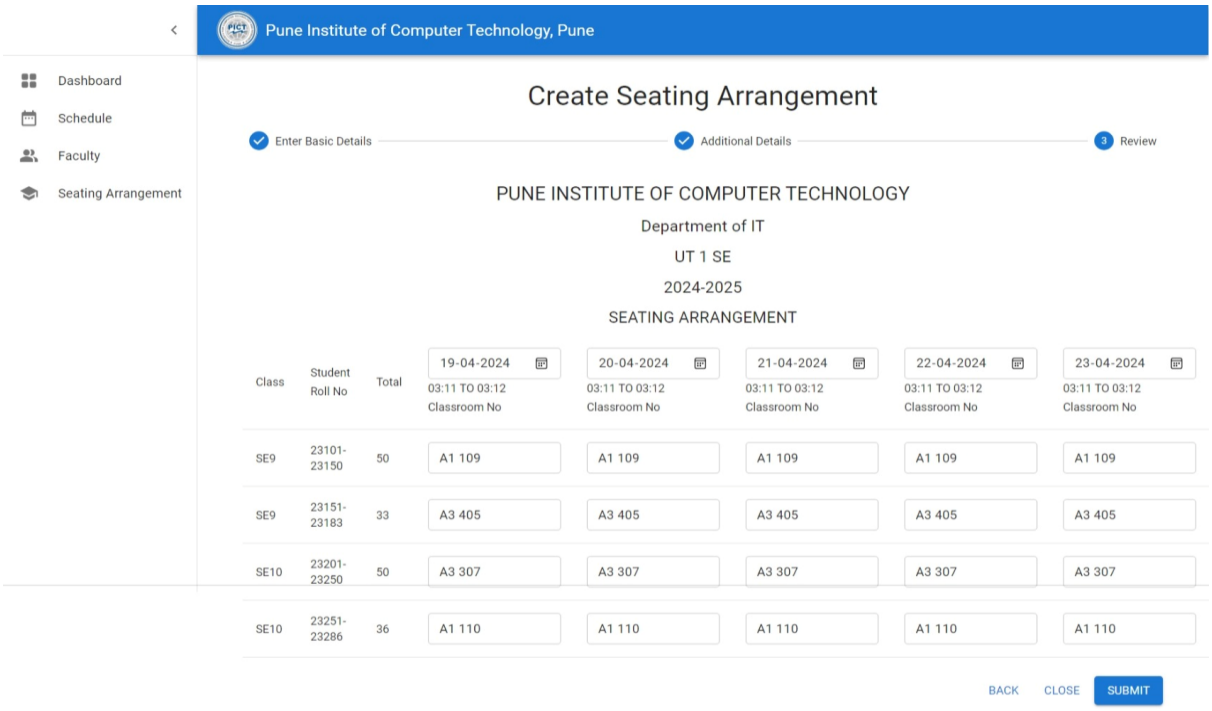
  - Axios: Handles HTTP requests from the frontend to the backend.
  - Body-parser: Parses incoming request bodies in middleware.
  - CORS: Enables Cross-Origin Resource Sharing to allow requests from the frontend.
  - EJS: Generates HTML markup with embedded JavaScript for server-side rendering.
  - Joi: Validates and sanitizes user input.
  - Method-override: Overrides HTTP methods such as PUT and DELETE in forms.
  - Mongoose: Provides a schema-based solution for modeling application data.

OUTPUT

Seating Arrangement Section:

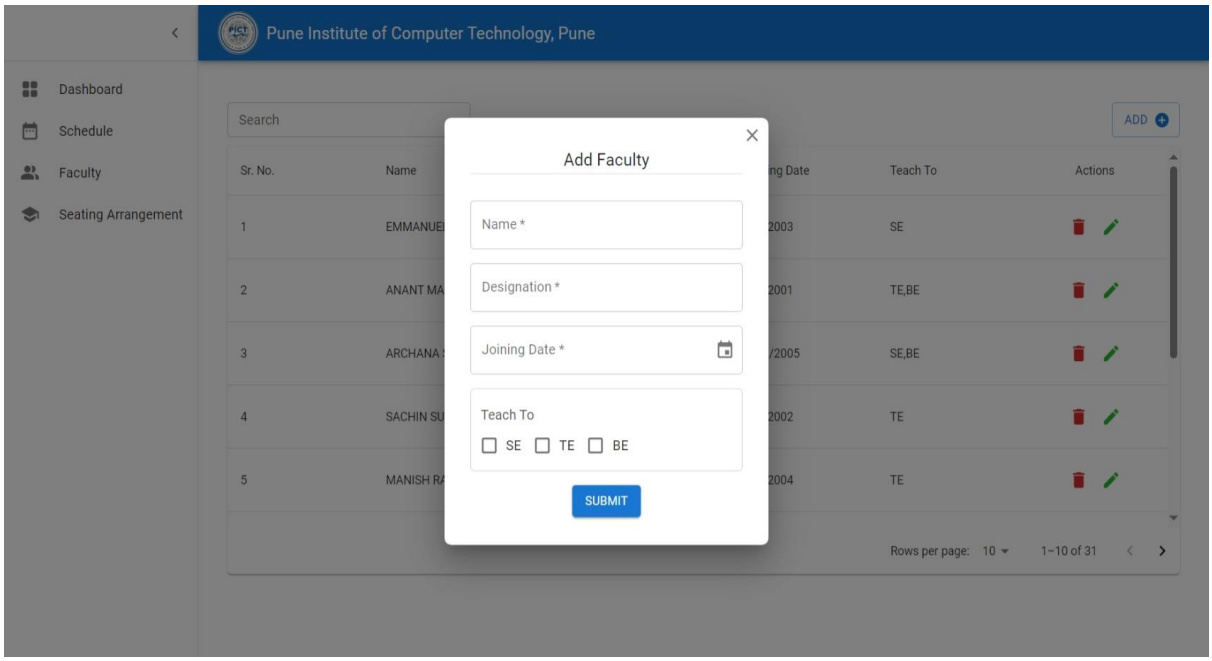




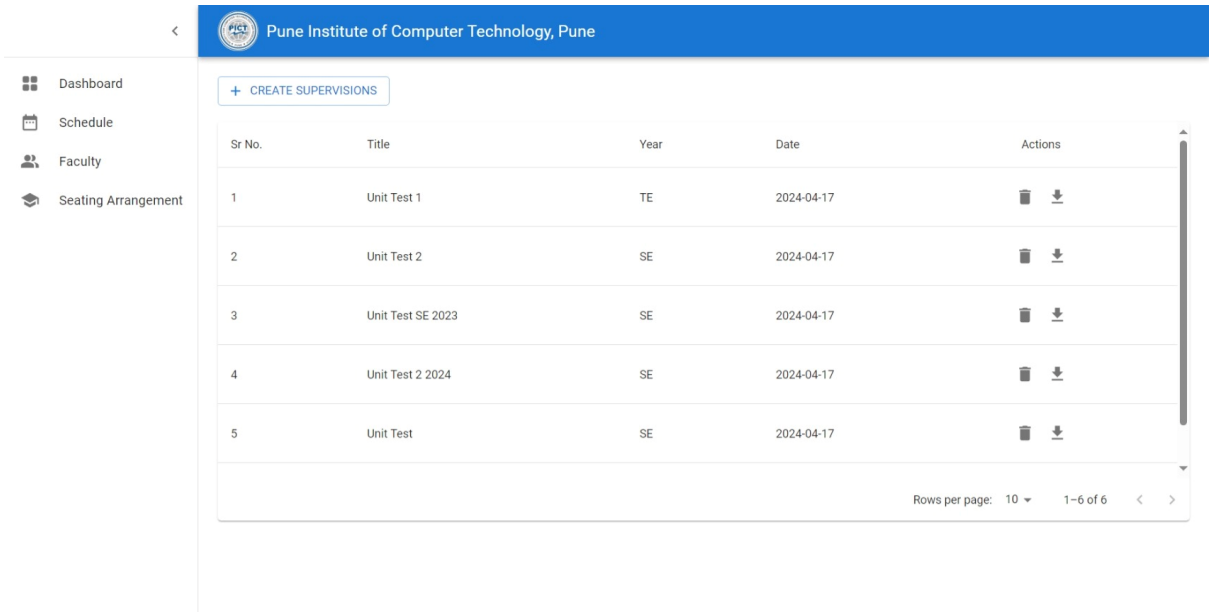


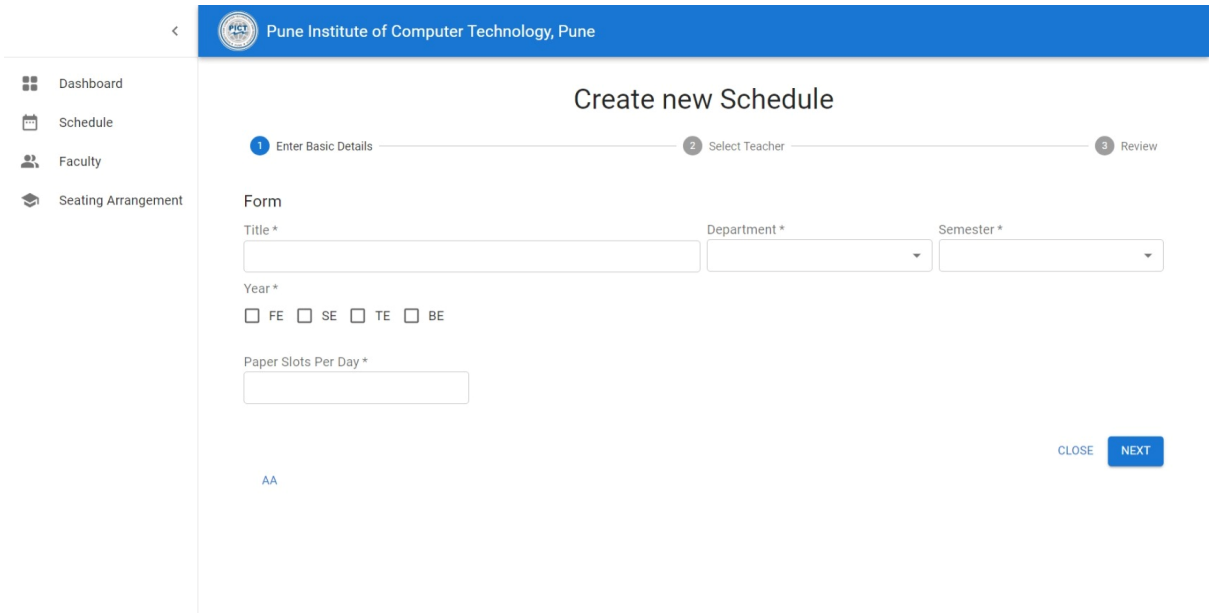
PUNE INSTITUTE OF COMPUTER TECHNOLOGY
Department of IT
UT 1 SE
2024-2025
SEATING ARRANGEMENT

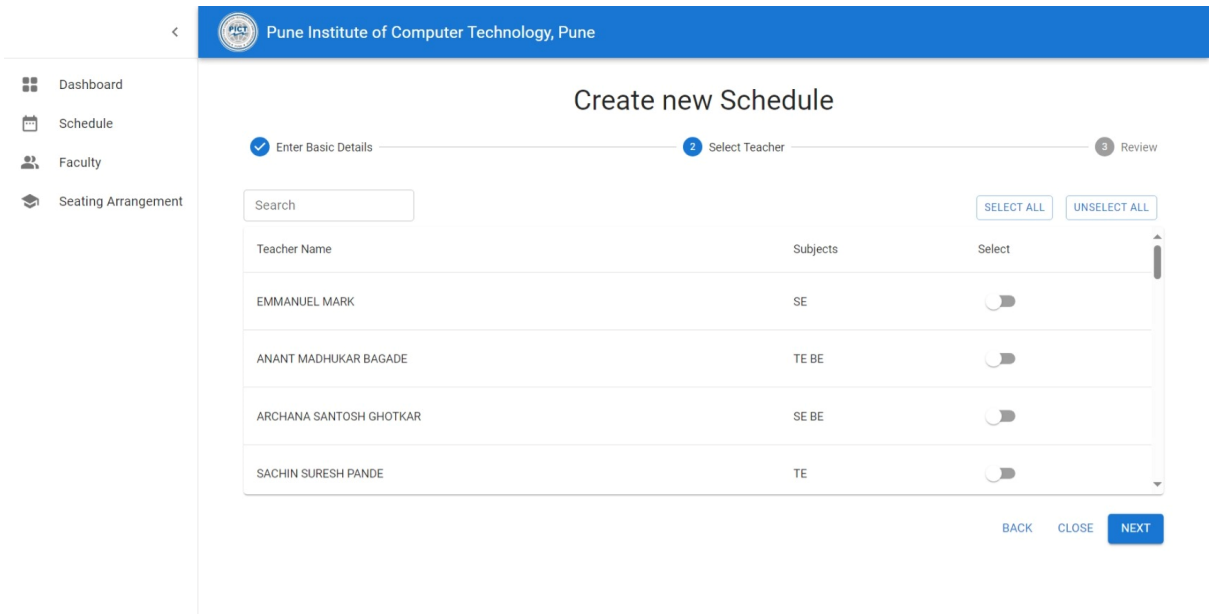
Class	Student Roll No	Total	19-04-2024 03:11 TO 03:12	20-04-2024 03:11 TO 03:12	21-04-2024 03:11 TO 03:12	22-04-2024 03:11 TO 03:12	23-04-2024 03:11 TO 03:12
SE9	23101-23150	50	A1 109	A1 109	A1 109	A1 109	A1 109
SE9	23151-23183	33	A3 405	A3 405	A3 405	A3 405	A3 405
SE10	23201-23250	50	A3 307	A3 307	A3 307	A3 307	A3 307
SE10	23251-23286	36	A1 110	A1 110	A1 110	A1 110	A1 110

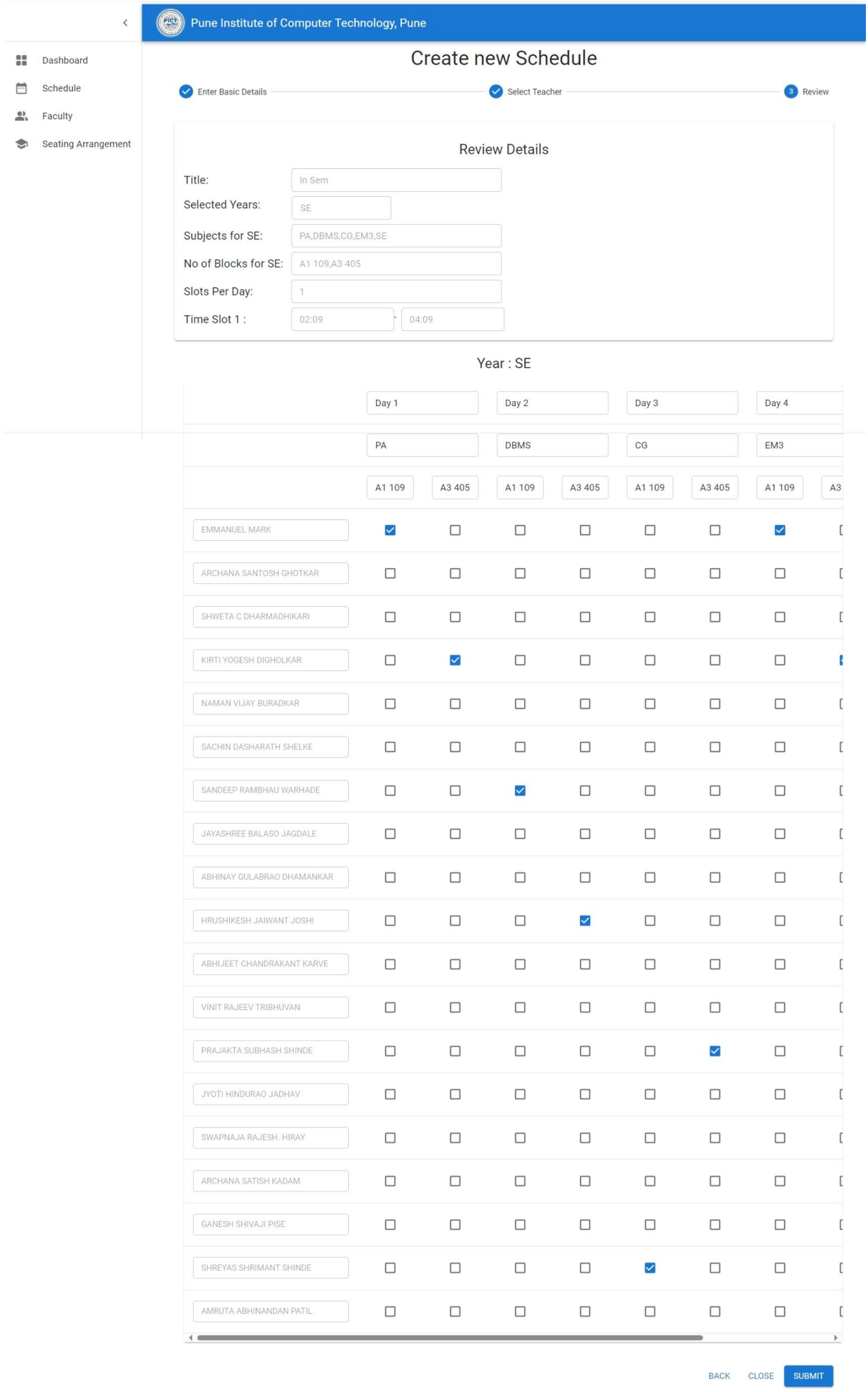


Supervision Schedule Section:




Pune Institute of Computer Technology, Pune
Dashboard
Schedule
Faculty
Seating Arrangement
Create new Schedule
1 Enter Basic Details
2 Select Teacher
3 Review
Form
Title *
Department *
Semester *
Year *
FE SE TE BE
Paper Slots Per Day *
CLOSE
NEXT
AA


Pune Institute of Computer Technology, Pune
Dashboard
Schedule
Faculty
Seating Arrangement
Create new Schedule
Enter Basic Details
2 Select Teacher
3 Review
Search
SELECT ALL
UNSELECT ALL
Teacher Name
Subjects
Select
EMMANUEL MARK
SE
ANANT MADHUKAR BAGADE
TE BE
ARCHANA SANTOSH GHOTKAR
SE BE
SACHIN SURESH PANDE
TE
BACK
CLOSE
NEXT


Pune Institute of Computer Technology, Pune
Dashboard
Schedule
Faculty
Seating Arrangement
Create new Schedule
Enter Basic Details
Select Teacher
3 Review
Review Details
Title: In Sem
Selected Years: SE
Subjects for SE: PA,DBMS,CG,EM3,SE
No of Blocks for SE: A1 109,A3 405
Slots Per Day: 1
Time Slot 1 : 02:09 - 04:09
Year : SE
Day 1 Day 2 Day 3 Day 4
PA DBMS CG EM3
A1 109 A3 405 A1 109 A3 405 A1 109 A3 405 A1 109 A3
EMMANUEL MARK
ARCHANA SANTOSH GHOTKAR
SHWETA C DHARMADHIKARI
KIRTI YOGESH DIGHOLKAR
NAMAN VIJAY BURADKAR
SACHIN DASHARATH SHELKE
SANDEEP RAMBHAU WARHADE
JAYASHREE BALASO JAGDALE
ABHINAY GULABRAO DHAMANKAR
HRUSHIKESH JAIWANT JOSHI
ABHIJEET CHANDRAKANT KARVE
VINIT RAJEEV TRIBHUVAN
PRAJAKTA SUBHASH SHINDE
JYOTI HINDURAO JADHAV
SWAPNAJA RAJESH. HIRAY
ARCHANA SATISH KADAM
GANESH SHIVAJI PISE
SHREYAS SHRIMANT SHINDE
AMRUTA ABHINANDAN PATIL
BACK CLOSE SUBMIT

PUNE INSTITUTE OF COMPUTER TECHNOLOGY
Department of IT
In Sem
Duty Schedule SE

Teacher Name	Day 1		Day 2		Day 3		Day 4		Day 5	
	PA		DBMS		CG		EM3		SE	
	A1 109	A3 405	A1 109	A3 405	A1 109	A3 405	A1 109	A3 405	A1 109	A3 405
EMMANUEL MARK	1						1			
KIRTI YOGESH DIGHOLKAR		1						1		
SANDEEP RAMBHAU WARHADE			1						1	
HRUSHIKESH JAIWANT JOSHI				1						1
PRAJAKTA SUBHASH SHINDE						1				
SHREYAS SHRIMANT SHINDE					1					

CONCLUSION

In closing, the Supervision Duties Allotment project stands as a testament to our commitment to improving academic operations within the IT department. Through the implementation of an intuitive interface and a robust backend system, we've successfully addressed the complexities of supervision duties, scheduling, and seating arrangements.

By automating tedious tasks, streamlining processes, and fostering collaboration, we've elevated efficiency and transparency in academic management. Despite challenges along the way, our collective dedication ensured project success.

Looking ahead, our journey doesn't end here. We remain dedicated to refining and expanding the system based on ongoing feedback and emerging needs. This project exemplifies the transformative potential of technology in academia, paving the way for a more seamless and enriching learning environment.

REFERENCES

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- Express.js. (n.d.). "Express.js Documentation." Retrieved from https://expressjs.com/Axios. (n.d.). "Axios Documentation."

- The Axios documentation provides comprehensive guidance on making HTTP requests from the frontend to the backend, essential for communicating with the server and fetching data in the Books Reselling Website.

- Material-UI, is a popular React UI framework that provides a set of customizable components based on Google's Material Design guidelines for building modern web applications. https://mui.com/

- The "jspdf" package on npm is a JavaScript library that allows developers to generate PDF files in the browser or Node.js environment programmatically. https://www.npmjs.com/package/jspdf

- MongoDB. (n.d.). "MongoDB Documentation." Retrieved from https://docs.mongodb.com/