

## Problem statement

Managing seat occupancy across multiple offices is inefficient, leading to high real estate costs. As the workforce scales above a certain limit, a smart allocation tool is needed to optimize space, reduce costs, and improve energy efficiency.

## Scope

This tool optimizes seat occupancy, reducing real estate costs while managing employee roles, work models, and bulk onboarding. It features drag-and-drop seat allocation, a dashboard for tracking utilization, energy consumption, and CTC breakdown, along with QR code check-ins for live office management.

## Solution review

- Our tool allows employer to classify employees among different work models like office hybrid and remote work model
- Our tool is supported by all operating systems(both app and website is developed at the same time)
- Number of employees can be managed by the admin or the employer
- Our tool can be used to monitor the energy consumption of the office

## Technical approach

### Backend

Prisma ORM(object relational mapping) = simplifies sql statements

Postgreslqdatabase = (to define tables to store data)

There are many services offered by aws some of them are used in our project

Aws s3 = to convert images to object url

Aws ec2 = to deploy sever (renting a server)

Nginx command line software for setting up a server(to accept and respond to request)

Type script= add types to js (entire code is written in type script) similar to js

### Frontend

React = frontend framework

React native= is used for making out tool supported in all devices

Expo= it is a sandbox environment to display applications during development time

Tailwind css=css framework

Both app and a website are developed at the same time

## Impacts and benefits

- **Optimized Space Utilization:** An office seat planner helps in optimizing the use of available space, ensuring that every corner of the office is utilized effectively. This can lead to cost savings in terms of real estate and utilities.
- **Improved Communication and Collaboration:** By strategically placing employees in close proximity to one another, it becomes easier for them to engage in frequent and meaningful conversations.
- **Enhanced Productivity and Efficiency:** An office seating chart can significantly enhance productivity and efficiency within a workspace. When employees are seated strategically, it becomes easier for them to access the resources and tools they need to perform their tasks effectively

## Conclusion

- Our office seat planner solution addresses the core problem of efficient seat occupancy planning and management across multiple offices
- It solves the problem of efficient seat allocation ,real estate cost savings and energy management

## Future Improvements

**Advanced Analytics:** Incorporating advanced analytics and reporting features to provide insights into seat occupancy trends, energy consumption patterns, and cost savings.

**AI and Machine Learning:** Leveraging AI and machine learning to predict seat occupancy patterns, optimize space utilization, and suggest improvements.

**Enhanced User Experience:** Continuously improving the user interface and experience based on user feedback to make the tool more intuitive and user-friendly