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| SMART DESK RESERVATION |
| **Team SheSquad**  Organization: Credit Suisse  Women In Technology Hackathon  June 2020 |

Problem Statement:

Create an application to assist employees to pre-book their desks and confirm their arrival to the office which will help in maintaining limited employee count at any given point of time and social distancing during this COVID situation.

Background:

We are moving towards a new COVID world where we will have to start working from office, stepping outside of our home, but still maintaining all social distancing steps. One of the problems which we came across was “how are we going to limit the number of people coming to office in the most efficient way”.

Most of the companies have either fixed seating arrangements or smart working environment, in either of the case the problem we will face when we are trying to bring people to office on count/rotation basis will be how to restrict the number of people coming, how will these desks be assigned so that social distancing is maintained because every day different sets of people would be coming.

We have thus come up with the idea of a “SMART DESK Reservation”, a web based application, which will help the employees to pre-book their desks and confirm their arrival to the office ,which will in return help the office administration in maintaining limited employee count at any given point of time and social distancing during this COVID situation.

* With this, employees can get to know how many employees are going to office at the tip of their fingers. We can Pre-book our desks before reaching office We will be able to View entire floor plan and its desk occupancy/availability, on a click of a button.
* People would be able to view individual’s reservation details that is who has booked which seat as of that moment

In addition to this, it will allow the administration to limit number of employees working from office at a particular day/time and eventually increase the occupancy percentage from say 20% to 40% and so on as the situation gets better day by day (which we hope too) in this new COVID world , thus allowing us to control the Number of desks available for booking; Based on phases of the COVID plans , thus ”Accelerating the New normal” for our post-COVID days.

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Features:

* Allows booking of a single desk by an employee 1 day prior/before 8am for current day
* Cancellation of the reservation latest by 8am of the day of booking (*not in scope of this submission*)
* View entire floor plan and its desk occupancy/availability
* View individual’s reservation details
* Number of desks available for booking is controlled; Based on phases of the COVID plan, desk availability can be increased ex: 20% in phase 1, 40% in phase 2 etc.

Technology Used:

The app UI is designed with HTML5/CSS and Angular and backend code is in Node.js with Express Framework. DB used for this submission is NeDB, an in-memory DB. The app is hosted on IBM Cloud.

Solution Design Benefits:

* Employee profile & Desk information are accessed via Rest API, which gives the flexibility to re-route these to the actual data source when we need to integrate to the actual solution (with minimal impact to the app).
* “Lightweight Javascript Database” are currently used for storing desk reservation data and interactions to these DB are via API. Hence, this gives us the flexibility for migrating these DB files to bigger DB in the actual solution with minimal to no code changes in the app.
* *Overall management of desk allocation, releasing of desks for more occupancy will be centrally controlled by Admin (UI for this is not in scope of this submission)*

Essential Links:

* Git Repository of Node.js project:  
  <https://us-south.git.cloud.ibm.com/susithra.chandrabose/SheSquadNodejsExpress>
* Angular UI project:  
  <https://github.com/susithrac/shesquad>
* Link to Demo Video:

<https://photos.app.goo.gl/JPK1WmSpfFyUMrUz5>