**Food Bill Management:**

**Problem Statement:**

* In the company’s cafeteria, there used to be a manual process of billing the orders that the employees make.
* Although there was a chart showing the items and their corresponding price, the items differed day to day due to which cafeteria owner was not able to change the chart.
* Since there was crowd gathering at the cafeteria for orders, the owner will be busy in serving the order, which was taking a lot of time for each employee to bill their order.
* Since the cafeteria owner will be busy serving the orders, he was not able to track the payment of each person on a daily basis.
* Some employees used to make orders for the day and pay the bill at the EOD, due to which the chances of remembering each item they ordered were less and were not able to track their payment.

**Solution:**

* There needs to be an application which:

1. Can show the total bill with a summary of orders that the employees make.
2. Allows the cafeteria owner to alter the items chart depending on the availability of items.
3. Allows the employees to track their order transactions.
4. Allows the cafeteria owner to track the transactions of each employee.

* The current application makes a way for cafeteria owner and the employees to manage the orders and transactions without consuming more time.

**Features:**

There are two entities from which the application can be accessed:

1. User
2. Admin

1)  **User Features:**

* Users can sign up with credentials such as name, email, employee ID, password and phone number.
* Users can login with the email and password.
* Users can select the items with the desired quantity in different categories.
* Users can view the structured summary of each item, quantity, subtotal of the item and total bill of the order.
* Users can pay the bill for the order.
* Users can track their transactions.

2) **Admin Features:**

* Admin can login using email and password.
* Admin can add categories of items.
* Admin can add, update and delete a single item.
* Bulk Upload: Bulk upload feature allows the admin to add an excel file containing the items and their details. This feature helps admin to upload more items at once.
* Admin can view the transactions of all the employees.
* Admin can filter the transaction for a particular duration.

**Requirements:**

* **Hardware Requirements:**

Hard Disk : 512Gb

RAM : 8 Gb or more

CPU : Intel i5 or more

* **Software Requirements (for development):**

Operating System : Windows 10

Front End : Angular v15, Bootstrap, ng-bootstrap

Backend : Node.js, Express.js

ORM : Sequelize

Database : PostgreSQL

* **Software Requirements (for running):**
* A working browser. Latest version of chrome browser is preferred.

**Application Workflow:**

Diagram

Description automatically generated

**Modules:**

1. **Sign up:**

* Signup filed consist of fields like: First Name, Last Name, Employee ID, Email, Password, Confirm Password, Contact Number.
* The First Name is a required field and Last name is optional.
* Email field is validated with necessary conditions like ‘@’ and ‘.’. If the input fails the conditions, the form is treated is invalid and a small text appears with the message ‘Invalid Email’.
* Password and confirm password must be same, failing which the pop up appears with the message ‘Passwords did not match’.
* Failing to fill the required fields, a small text appears with a message: <filed> is required.
* On successful Signup, a pop up appears with the message ‘User Registered Successfully’ with the name of the user.

1. **Login:**

* Login module consist of input elements: one for email and other for password.
* Email field is validated with necessary conditions like ‘@’ and ‘.’. If the input fails the conditions, the form is treated is invalid and a small text appears with the message ‘Invalid Email’.
* Password field is of password type and represented as dot when user starts typing. If the field is empty, the form is treated as invalid and a small text appears with the message ‘Password is required’.
* If the credentials did not match, a pop us appears showing the message ‘Invalid Credentials’.
* If the login is successful, then it redirects to the path of user if entered credential is users’ else admin if it matches admin’s credentials.

1. **Authentication and Authorization:**

* Authentication is done using JWT (JSON web token) based on OAuth 2.0 standard, which provides more security for the application.
* Authentication is done during the login process. When the credentials are entered, and user hits the login button, the request comes to backend for its validation.
* If the email does not exist in the database, then a ‘User not found’ message is sent with the status code 404.
* If the email exist, the password from the request is first encrypted, then compared with the encrypted password stored in the database for that user. If both the strings match, then ‘Login successful’ message is sent from the backend with status code 200. If passwords didn’t match, then ‘Invalid Credentials’ message is sent with the status code 401.
* ‘bcrypt’ package is used to encrypt the password, then stored in the database.
* If the login credentials are matched, then it is routed to either user or admin based on the credentials.
* Authorization is done using the Route Guard feature provided by the Angular framework.
* If the logged in user’s role is the common user, he cannot access the admin route, and vice versa. This is achieved using the JWT Token’s payload which contains the role as one of its properties.

1. **Add Category (for Admin):**

* Admin can add the Category.
* There will be input field called Category Name. On submitting form, new category is added.

1. **Add Item (for Admin):**

* Admin can add the items by clicking on Add Item Button.
* The form contains fields like item name, category, price, ratings, description, discount. Name, Category and Price are the required fields, which failing to enter, appears a small message ‘<field> is required’.
* Bulk Upload is one of the unique features, which allows the admin to upload an excel file consisting of more number of items and their details at once.
* Only CSV and Excel file types are allowed for Bulk Upload.
* On Successful input of all the required fields, the form is then submitted and a pop up appears with a message ‘Item added successfully’ with the Item’s details.

1. **Items View:**

* The items view is an accordion of categories. On toggle of each category, the items of that category appears with different views for user and Admin.
* An increment and decrement button with the quantity indicator appear for the user, allowing them to select or remove any item any number of times.
* An Update and Delete button with corresponding functionality appear for the Admin. Admin can be able to update and delete each item. If either of the operations are successful, a message ‘Item <operation> successfully’ appears in the pop up.

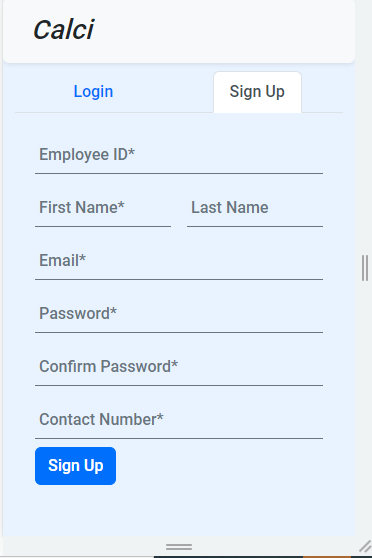
1. **Summary (for User):**

* User, after adding or removing particular items, can click on show total button at the end of the accordion.
* On click of this button, a pop up appears with the Summary containing the fields: Item Name, Quantity, Item total, total of all items they had selected.
* There will be a button called Mark as Paid. If user clicks this button, the whole order summary is added as a transaction in the Database.
* After successful addition of the transaction, a pop up message appears with the message ‘Order Added Successfully’.
* There will be an option to view the transaction for user where he can see his past transactions.

1. **View Transactions (for Admin):**

* There will be option to view the transaction for the admin where he can view all the transaction of all the users.
* Admin can select the dates for which he wants to filter the orders. Custom fields are provided to view the transactions for that duration.

Graphical user interface, text, application

Description automatically generated**Screenshots:**

**Sign up Page Login Page**

Graphical user interface, application

Description automatically generatedGraphical user interface, application

Description automatically generatedGraphical user interface, application

Description automatically generated**Home page (for Admin) Add Item (for Admin)**

Graphical user interface, text, application

Description automatically generated

**Home Page (for User)**

**Bulk Upload (for Admin)**

Graphical user interface, text, application, chat or text message

Description automatically generated

**Show Total (for User)**