

# **Project Requirements StoreFront**

CMPE 157A-01 Team 30

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# Project Description

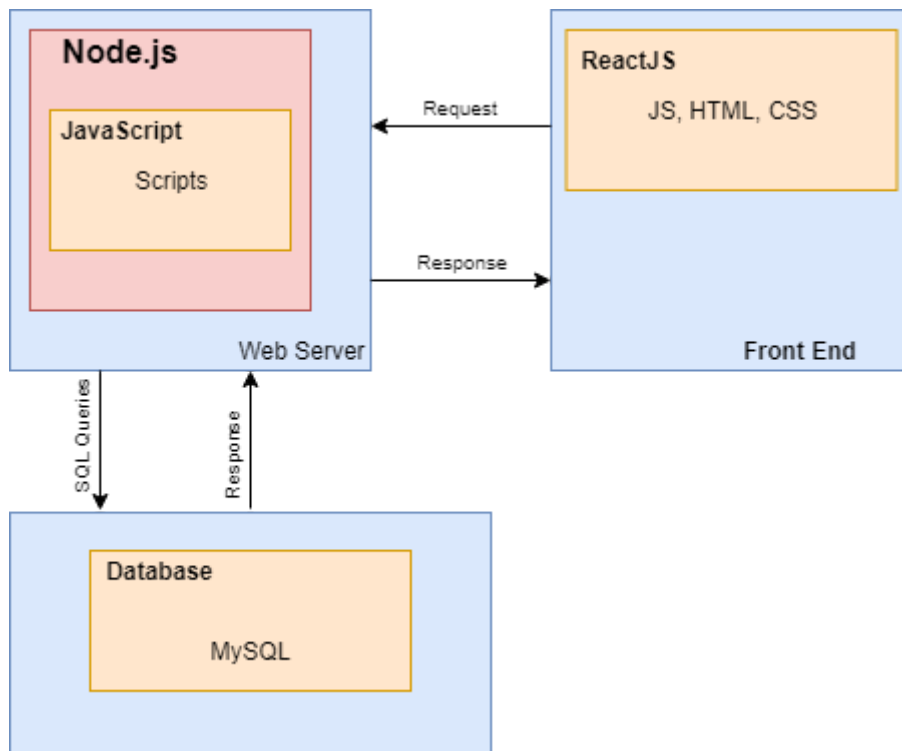
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The goal of this project is to create a food ordering system for customers at a food court. The motivation of this project is to help streamline the process for customers to order food. The process of food ordering will be sped up as customers will be able to clearly select what they wish to order from photos, food names and prices. Stakeholders of this project will include the owners and managers of food businesses as they would be using the product to sell food. Additional stakeholders include the programmers who implement the application and project managers of the project. Benefits to users include an improved experience to order food. This improved experience will come from menus being easier to read with large photos and text being presented on a screen. Additional contributions to the experience will include having existing payment information be stored in the system so the user can checkout faster. In addition to the improved experience, users will likely spend less time in line as the system can reduce the amount of time spend ordering food.

# System Environment

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The design of our system environment includes the use of a Linux based machine to house our database application. This Linux machine will host a Node.js webserver that will be serving our application to the users. The database that we will use will be created and maintained by a MySQL DBMS. The front-end application will be written using React.js. The front-end will then communicate with the database through the business logic tier, written in Node.js. Overall, this project will require knowledge of MySQL, Node.js, and React.js to arrive at completion.



## Software and Hardware used

- Linux based machine

## RDBMS

- MySQL Community Server

## Application Languages

- Node.js, ReactJS, JavaScript, HTML/CSS

# Functional Requirements

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Our system is designed for customers of all ages and genders. The system is designed to target everyone from those who wish to purchase food from a store to those who just want to merely browse the list of available items. Users can access the website from anywhere, as long as they have access to the internet and an appropriate device such as a desktop computer or mobile phone. There are two types of general users for this StoreFront application: registered and unregistered users. The registered user can enjoy all of the features of the StoreFront application, which includes browsing, selecting multiple items to purchase to add them to shopping cart, save favorite items, modify payment information and update their personal account information. Unregistered users

will only be able to browse the various items, if they wish to purchase something then they will be prompted to create an account to complete the transaction.

## Functional Requirements:

- Create account/sign-up
  - Users will be able to create their account by entering their email, password, and additional information such as name. For those who already have an account and try to sign-up for a new one, the website will display a message alerting the user that their email is already in use for an existing account.
  - The system will check if a user's email and username already exists in the database. If email/username wasn't found, the system will write the new email and password to the database and display a message to the users letting them know that they have successfully created an account. If an email exists or is invalid, the system will display an error message to let users know that their account was not able to be created.
- Login/Sign-in
  - Users can login to the webpage by entering their registered email as the username and password.
  - The system will check to see if the given email and its associated password are the same with the information that are stored in the database. If it is, the system will allow the user to access their account. If it is not, the system will display an error message through the webpage to let the user know if the email or password is incorrect.
- Browse items
  - Users will be able to view all of the items in the database through the StoreFront webpage. Each item will have an associated image, name and price.
  - To display the items to the user, the system will access the item entity set in the database and return all of the values in the table.
- Search items
  - Users will be able to use system's search tab to search for specific items by item fields, such as category or name.
  - After a search is entered, the system will access the database to find all appropriate items. The results of the query will be displayed to the user. If the query returned a total of zero items, then a message will be displayed to let the user know.
- View cart
  - The system will display a cart button to the user which upon being clicked will redirect to the cart page.
  - Users will be able to see all items added to the cart plus the total price.

- Selecting and adding items in the cart
  - Users can select the items that they are interested in and add them to the cart to purchase later.
  - The system will keep track of current items in the cart for later use and only remove when the user deletes or purchases the item from the shopping cart.
- Deleting items in the cart
  - Users can remove/delete any existing item inside their shopping cart that they no longer want to purchase.
  - The System will access a particular relation in the database and delete the entity of the item(s) that the user specified to remove.
- Add new payment methods
  - Users will be able to add a new credit card as a method payment by entering card number, card type, holder name, CVV (card verification value), and card expiration date.
  - System will check with the database to see if the card number already exist or not. If so, the user will be notified that this payment method already exists. If it does not, store all this information in a secure way in the database
- Delete payment methods
  - User will be able to delete exist payment method of their choice.
  - System will access the database and delete the entity that match the value that the user selected.
- Select payment methods
  - Users can select already existing methods that they have created to check out their order faster.
  - The system will retrieve all payment options of the user and present it to them upon checking out items.
- View account information
  - Users will be able to view their username, password (which may hidden unless specified by user), and other personal information such as date of birth through the application user interface.
  - The system will access the database to retrieve the data in the corresponding entity and display the information through the application UI.
- View payment methods information
  - Users will be able to view all the credit card(s) that have saved in the system including: card number, card type, holder name, CVV, and card expiration date.
  - The system will access the database to retrieve the data in the corresponding entity and display the information through the application UI.
- Viewing email

- Users can see their email displayed directly on the screen with a protected layer concealing some of the characters.
- The system will access the database to retrieve the user's email and display it on the screen.
- Changing email
  - Users can change their email by confirming both an older email and a new email.
  - The system will check if the user provided the old email correctly with the database. If yes, replace the new email with the old one. Otherwise, keep the old email and display an error message through the screen.
- Changing password
  - Users can change their password by providing both an older password and a new password.
  - The system will check if the user provided the old password correctly with the database. If yes, replace the new password with the old one. Otherwise, keep the old password and display an error message through the screen.
- Purchasing items
  - Users will be able to purchase their current cart of items using a new/existing payment method.
  - The system will display the cart's total price to the user.
  - The system will decrement the item(s) entity data to denote that there is less stock of said item.
- View Past Orders
  - Users will be able to see orders that they made in the past.
  - The system will maintain a list of orders that the user made and return them on request.
  - Users will be able to view past orders as a list and click on an entry to view all details.

## Non-functional Requirements

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- Security
  - Users login information, username and password, as well as their payment method information will not be store directly inside the database. Instead, we will generate a key know as salt (the term use in cyber-security) and add it to these information and then hash it. We will then use the result of the hashes to store inside the database. By doing this, we can minimize the users' information from leaking out in case the database get hacked or hijacked.
- Access Control
  - Each user will only be able to view their own information which includes email and userID. A user will not be able to see their own password which can only be changed and not read. Each user will have control over only their own information and not be able to view another users info under any circumstance.
- Performance and Stability

- The system will be able to handle a large amount of users through various techniques which include usage of balance switches if user counts turn out to be too high. If the system gets too overloaded, then we will design a method to distribute server load across different servers to help balance the load.
- User Interface
  - Our user interface will make use of various techniques that should allow for better usability learned throughout Human Computer Interaction. This includes a variety of features one of which is making sure that the user does not feel overwhelmed with a bunch of different choices. We will attempt to ensure that in menu options we do not display more than 9 options to a user to ensure that it aligns with HCI principles. Another feature that we will attempt to implement is feedback whenever an action is taken to ensure that the user knows that they did something. This could be something as simple as updating a cart in real-time when the user adds an item to it. Another thing we will make sure of is that our user interface is consistent and simple across the board to allow both new and old users an easier time using our website. This may include things such as the usage of a shopping cart image that can be clicked to access the shopping cart or 3 stacked bars that can be clicked to access the side-bar.
- Ease of Use
  - The interface should be easy to use regardless of what potential disabilities a person may have. This may include allowing the usage of arrow keys to attempt to browse our website or common keys to do various things, such as using "esc" to exit from the current screen overlay or "enter" to access the currently selected hyperlink.