Project Report

Title: QLess

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1. Project Description

QLess, an app developed by us, aims to reduce and virtually eliminate the time spent by customers waiting for their order(s) to arrive at a cafeteria or restaurant. Generalizing the concept, QLess can be applied at places that require trigger from user/customer before actual processing of request begins.

Fundamental working concept of QLess is to:

- Allow an user to place order using the app, without requiring the user to be on premises
- Calculate time required, say *x*, for processing the order
- Give feedback to user in form of time required (*x*) and allow him/her to reach the respective location by the time order is processed, thereby saving the wait time

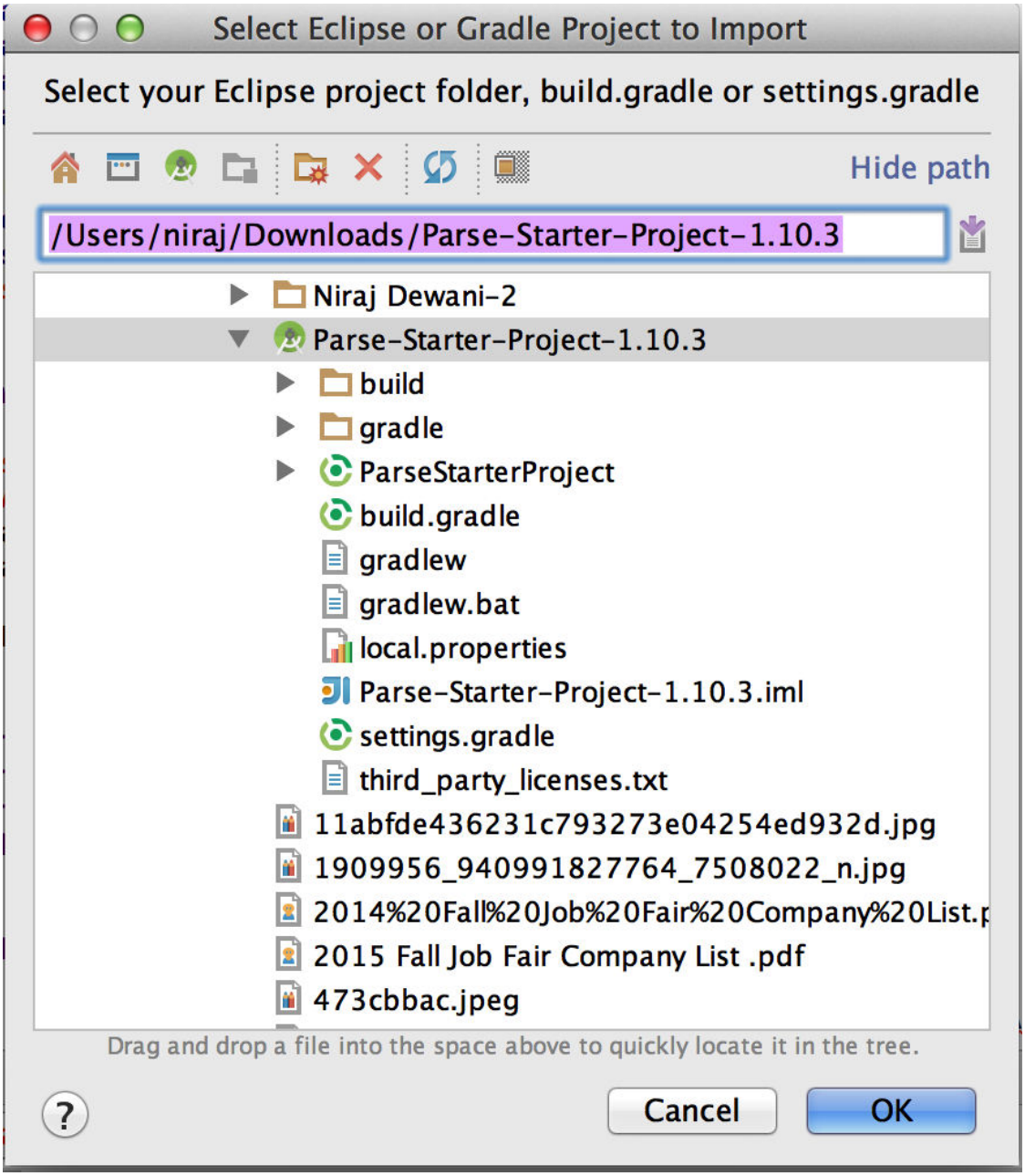
As an additional benefit, using QLess would allow restaurants to reduce infrastructure in terms of technology and space required for managing order queues and restaurant as a whole.

2. Steps to import

a. Download the Project folder named "Parse-Starter-Project-1.10.3".

b. Inside Android Studio, select File > New > Import Project

c. Select the “Parse-Starter-Project-1.10.3” folder from where it is downloaded



d. Building and running should run the app on emulator/external mobile device.

3. Control Flow

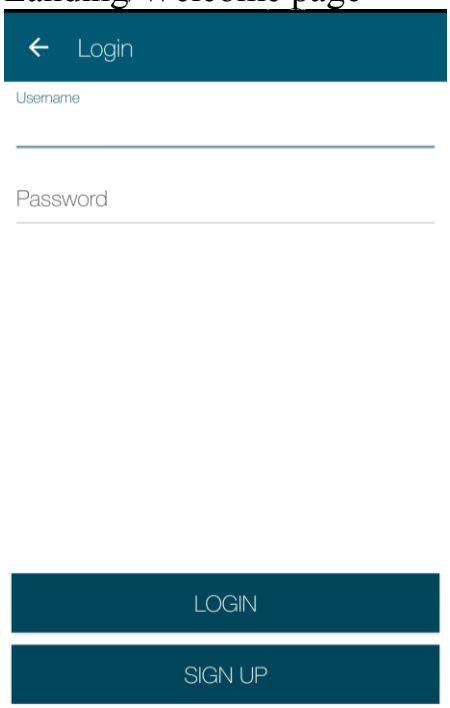
There are two interfaces to the app, one is the app itself - running on a customer's mobile device; and another is web interface (called admin panel, hereon) for cashier/waiter at the restaurant, for viewing current orders in queue and other functionality.

Following are various possible end-to-end scenarios:

1. Sign up
2. Place an order for a selected location and
   Check admin panel for the order
3. Search for an item
   Place order for the same and
   Check admin panel for the order
4. Add a new item using admin panel
   Navigate to menu of respective location in the app
   Place an order for the same and
   Check admin panel for the order
5. Block an user from admin panel
   Sign in using corresponding user's credential
   Try placing an order

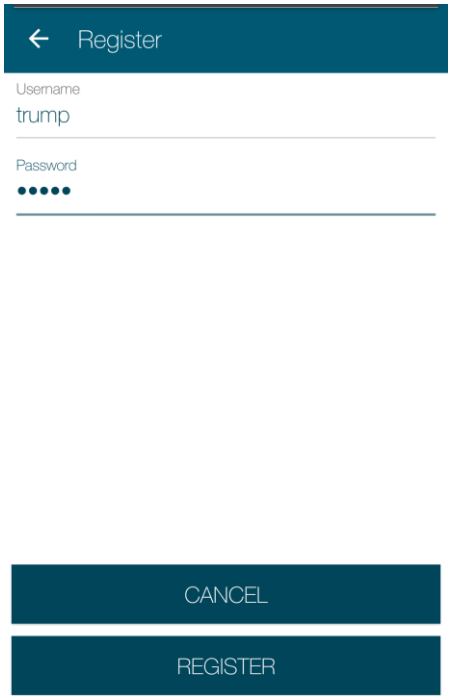
1 Sign up

1.1 Landing/Welcome page

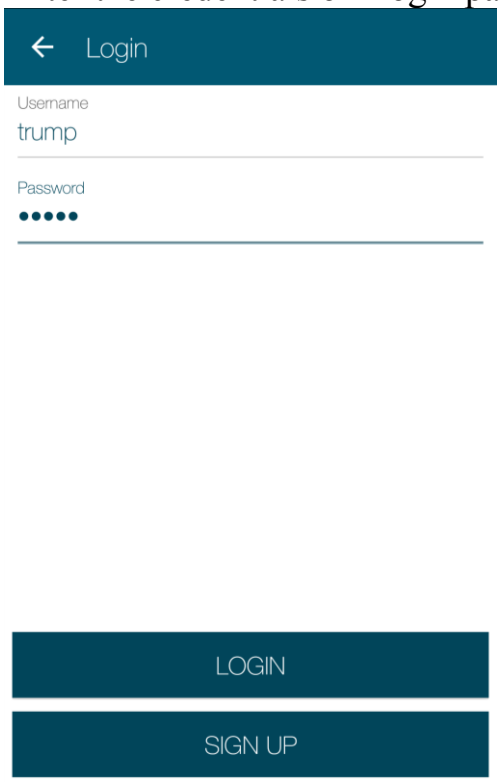


1.2 Click SIGN UP, Enter Username and Password

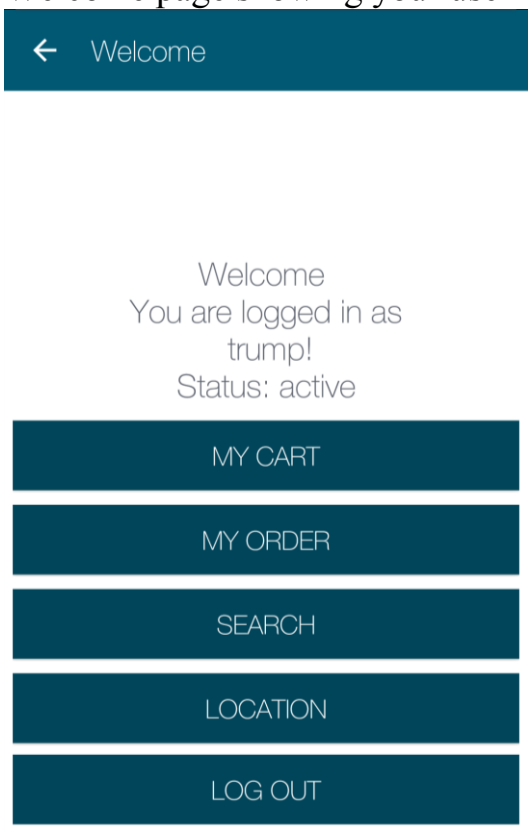
For example, enter trump for both the input fields and click REGISTER button



1.3 Enter the credentials on Login page and click LOGIN button

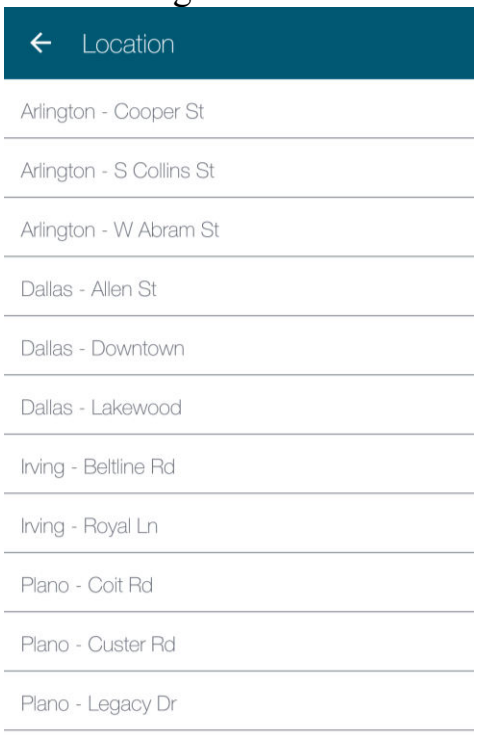


1.4 Welcome page showing your username

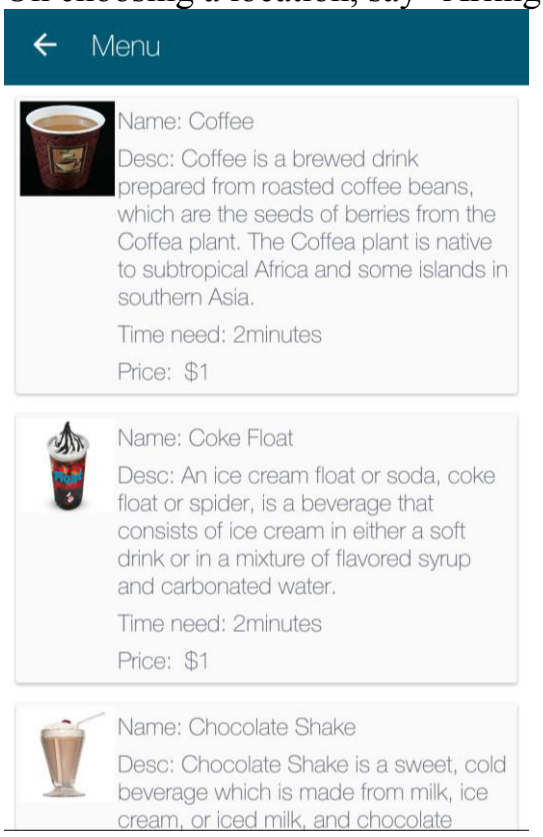


2 Place an order for a selected location

2.1 On selecting LOCATION button from “Welcome page”

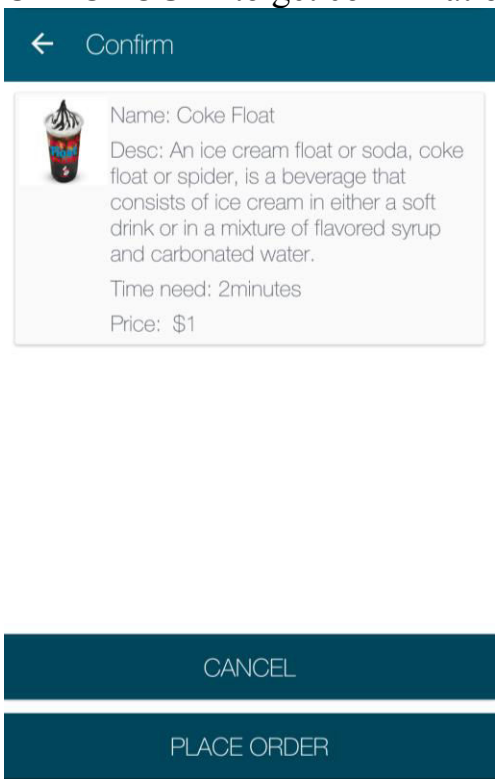


2.2 On choosing a location, say “Arlington – Cooper St”

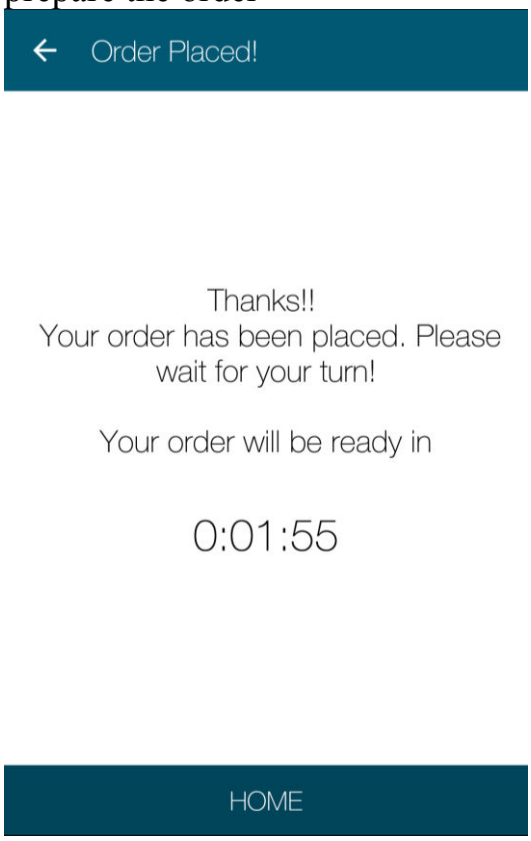


2.3 On choosing an item, say “Coke Float”

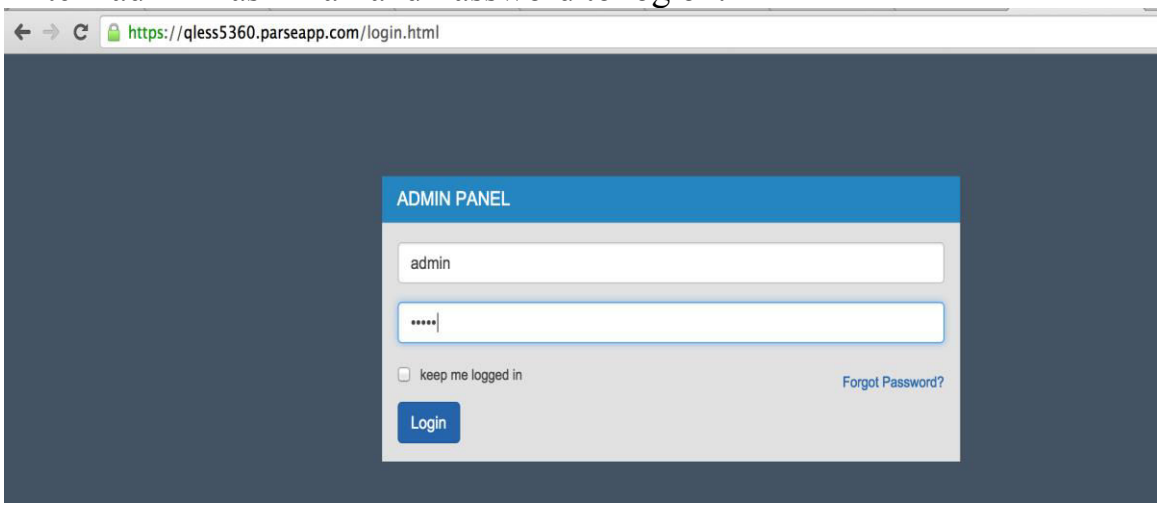
2.4 Click on “ADD TO CART” and then on “PROCEED TO CHECKOUT” to get confirmation page



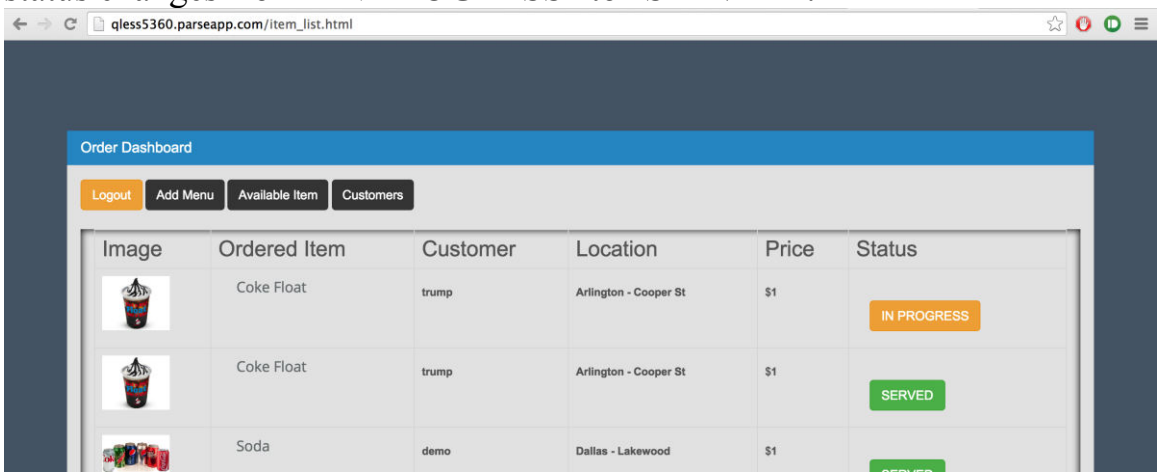
2.5 On choosing “PLACE ORDER”, page displays time required to prepare the order



2.6 Go to “qless5360.parseapp.com/login.html”
Enter “admin” as Email and Password to log on.

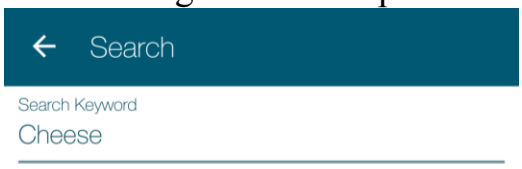


2.7 Landing page displaying orders, latest first, having order for “Coke Float” as topmost row.
The table shows Customer name, Location order was placed for, Price and Status (In Progress or Served).
Once estimated time for an order runs out, on refreshing the page, status changes from “IN PROGRESS” to “SERVED”.

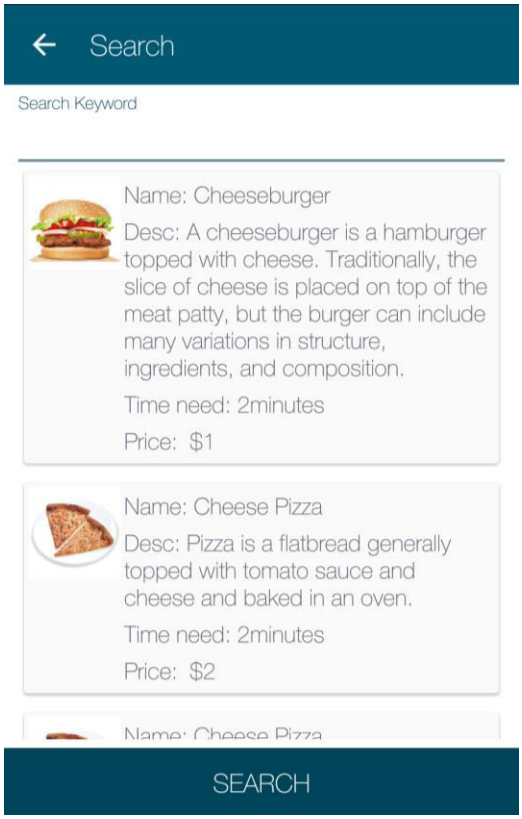


3 Searching and Ordering

3.1 On choosing SEARCH option from Welcome page



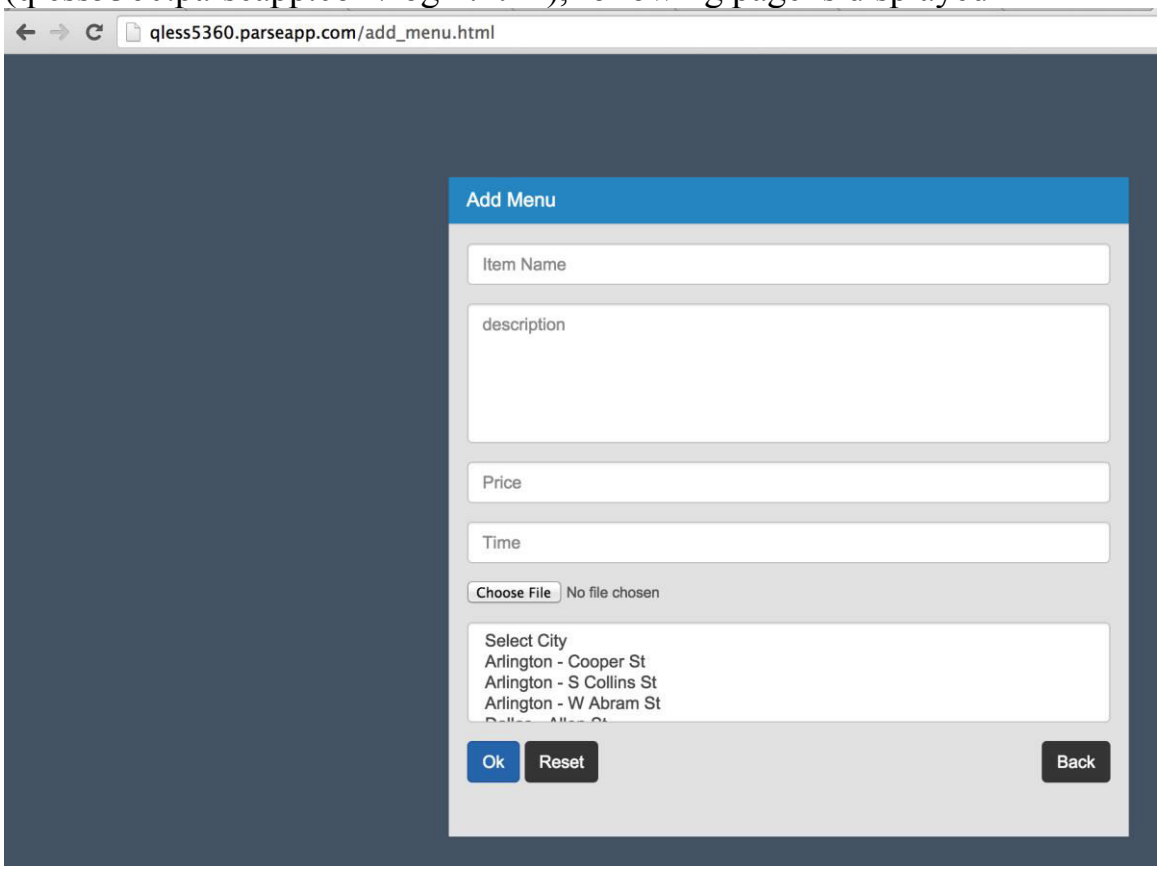
3.2 On entering “Cheese” as search string, all the items containing “Cheese” in their name are displayed (Cheeseburger and Cheese Pizza in this case). Please note that search performed is case sensitive.



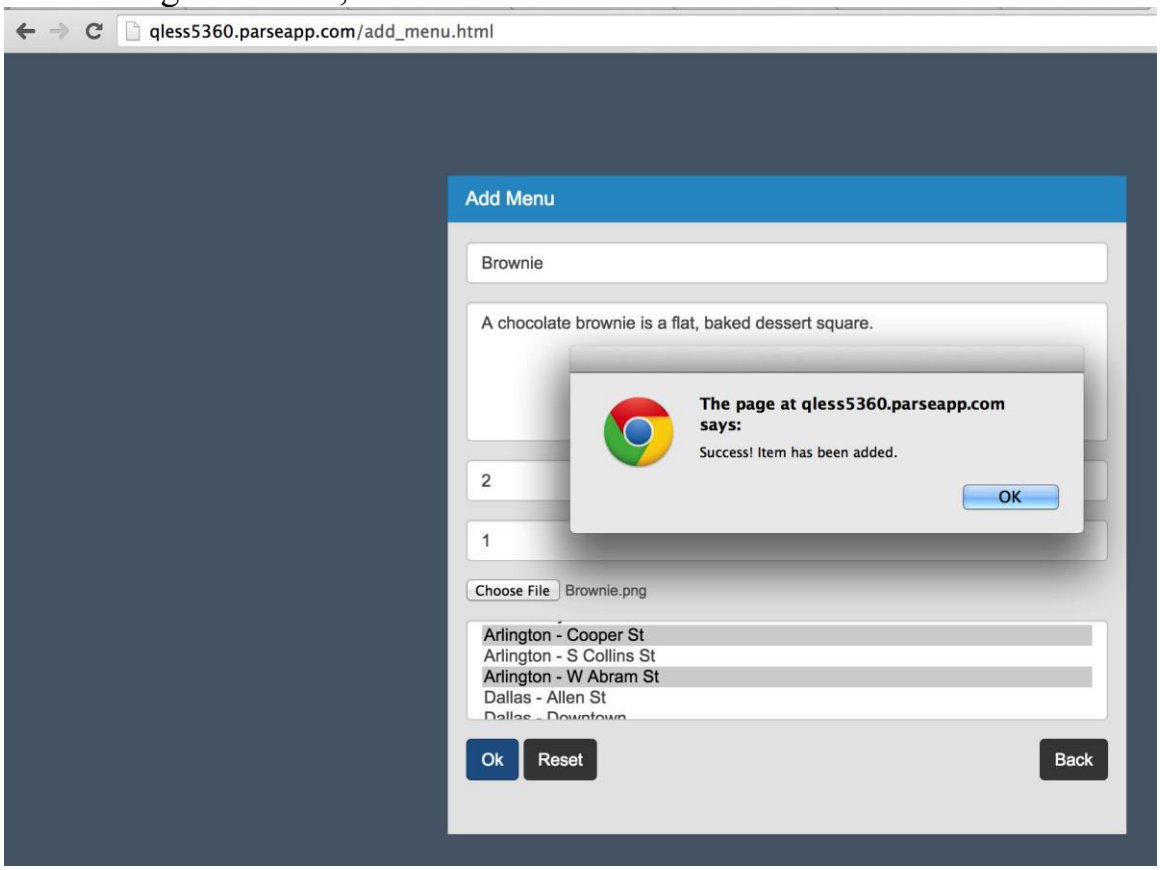
3.3 On selecting an item (Cheeseburger in this case), details of the item are displayed with an option to add the item in cart and place an order. The control flow for order the item is same as described earlier, hence has not been repeated.

4 Adding a new item and order the same

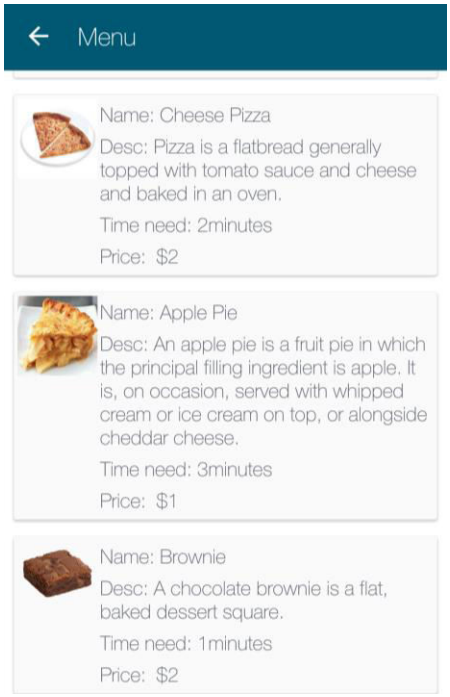
4.1 On clicking the “Add Menu” button on the admin panel (qless5360.parseapp.com/login.html), following page is displayed



4.2 Enter Item Name, Description, Price, and Time to prepare. Select an image for the item being added and Location. Multiple locations can be selected using control/command key, which would add the item to selected locations.
On clicking Ok button, a confirmation is shown.

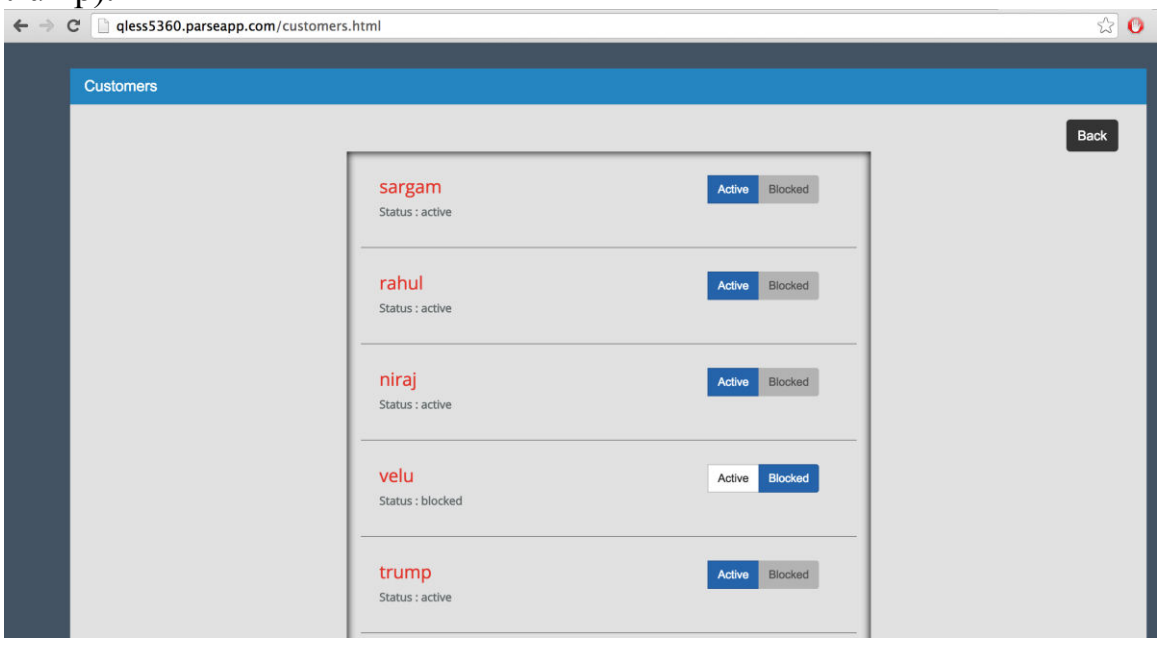


4.3 On the app, Navigating to menu of the corresponding location ("Arlington – Cooper St" or "Arlington – W Abram St" in this case), the item added ("Brownie") is listed as well. The item can be ordered as described earlier and hence has not been repeated.

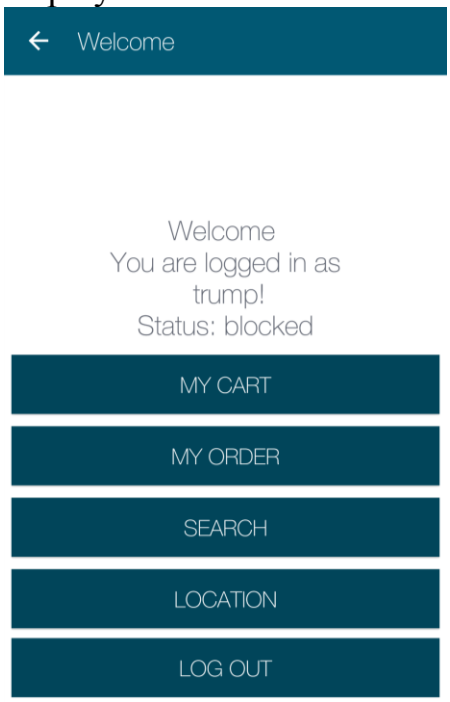


5 Blocking an user

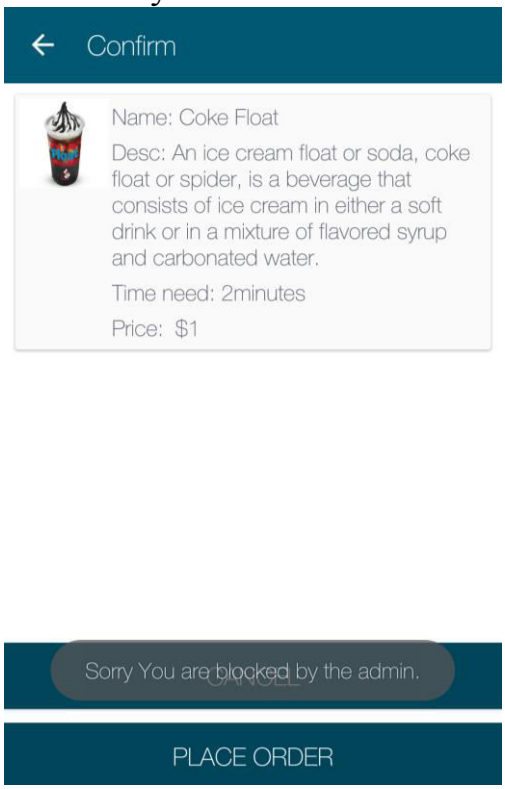
5.1 On the admin panel, clicking on "Customers" tab gives list of customers. Clicking on "Blocked" button blocks a user (say, trump).



5.2 Log in using the blocked user (trump in this case). The status displayed for the user is shown as blocked.



5.3 On trying to place an order, a toast is displayed “Sorry You are blocked by the admin”.



4. Implementation Details

Architecture:

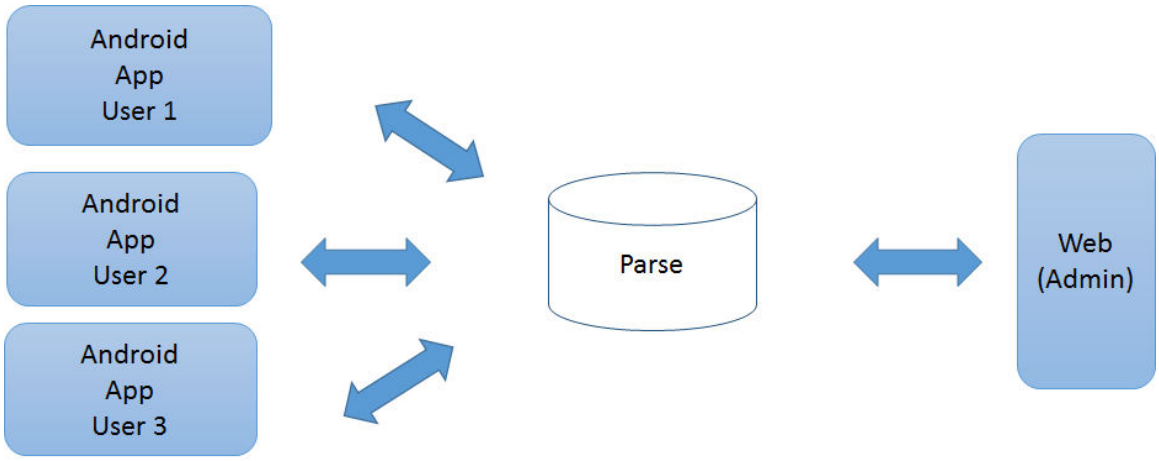


Figure 4.1 Architecture of QLess

A three tier architecture has been used as shown above. Parse.com acts as a backend in order to store data and serve the requests. Multiple users can make use of this app in order to place requests. Web interface gives a presentation view of the requests placed and also has the ability to block the activities of its users.

Android App:

Android Studio v1.4.1
SDK Platform v6.0 and API level 23

Middleware: Parse.com

Parse is one of the most popular Backend as a Service platforms. The service offers three products in one package: Parse Core, Parse Push and Parse Analytics.

Parse Core generally handles the saving of data and social media integration.

Parse Push is used to send push notifications. It enables the developer to customize, schedule and send push notifications to either all registered users or a select group of users.

Parse Analytics enables you to track your app's data. You can track usage data such as installations, active users, user retention, push notification open rate etc.

Website:

Using Bootstrap Framework v3.3.6, JavaScript, JQuery, HTML, CSS

Link: qless5360.parseapp.com/login.html

5. Work Distribution

We worked together, first towards the app and then the web (admin panel). Work was equally divided amongst the three, such that we learnt everything equally. Also, we followed feature driven development, implementing one end-to-end feature at a time.