

Report

Application Development for Mobile Devices

Table of Contents

❖ Implementation of Features in the Application	3
• Checklist of the Implemented Features.....	3
❖ Bugs and Weakness.....	5
❖ Strength or Special Feature.....	5
❖ Screenshots of Implemented Features	6
❖ Evaluation of the Application	23
• Human computer interaction	23
• Maintainability.....	24
• Changes that would need to be made for the app to be deployed for live use	24
❖ Reference	25

Implementation of Features in the Application

Checklist of the Implemented Features

Feature	Implementation
a) Basic Detail Input Screen	Fully implemented The application enables users to enter all the necessary elements. My application includes all the fields that are essential for collecting review from the users.
b) Restaurant Rating Screen	Fully Implemented The application enables users to view all the rating given by them. It facilitates the users to view all the entered details such as type of restaurant, data and time of visit, notes, etc and also total rating for each restaurant.
c)Implement Forms Validation	Fully Implemented Data/form validation is implemented in this application in order to make sure that all the data required fields are entered by the users. It also acts as a reminder if the users forget to enter the required fields. It also displays the entered detail back to the user for confirmation and allow them to go back and modify any entry they want.
d)Store, View and Delete the basic details and check for duplicate events	Almost Fully Implemented The application stores all the information submitted by the users. A web database had been created in order to store those data. They can also view all the information

	<p>submitted by them. Users can delete ratings, if they wish to. However, it doesn't check for the duplicate events.</p> <p>Additional feature: Users can also update their restaurant rating details.</p>
e) Search Facility	<p>Fully Implemented</p> <p>On the view rating page, users can search for a restaurant rating by using the search bar. The users can easily find a restaurant by searching with any relevant information about the restaurant such as restaurant name or type.</p>
f) Add a Note Input Screen	<p>Fully Implemented</p> <p>In the detail input screen, users are facilitated to add a note while submitting their restaurant rating. In there, users can add any extra information about the restaurant if they want to.</p>
g) Feature a) and c) Implemented as a native Android app coded in Java	<p>Fully Implemented</p> <p>An application has been developed by using Android Studio that enables users to enter all the necessary fields for the restaurant rating. All the required fields are validated in order to make sure that those field are not missed by the users.</p>
h) Additional Features to either or both Android or PhoneGap version of App	<p>Not implemented</p>

Bugs and Weakness

One of the weakness of my application is that it doesn't have separate screen for the users to enter the related information about a restaurant. Entering note or information about the restaurant is included in the main detail input screen. However, you can add the notes while you update the restaurant rating. On the update screen, users can add the any extra information on the top of the old note and save it or they can clear the old note and save new information.

On the Update Rating Form, the cleanliness, food quality and service ratings are set empty. For example: if users want to update only the price of a restaurant, they have to again give all those service rating along with the price. However, all the other fields such as Restaurant Name, Type, Date of Visit, Notes and Reporter will carry the former values or new values if they are updated.

My application doesn't facilitate to upload restaurants' location or images. It would be better if those features were included.

Strength or Special Feature

One of the strengths of my application is design. I have used jQuery mobile in order to design the theme of the application. With the use of mobile jQuery and jQuery Theme-Roller, I am able to design the well-structured interface optimised for the mobile platform. The pages have clear headers and footers. The text fields and texts are in the appropriate distance in a well-structured layout.

My application is very interactive, feedback is given every time after a task is performed by the users. For examples: when there is any invalid data in entry it signals the users and when the rating is added, deleted or updated it notifies users about it. It also asks for the confirmation on major tasks such as add, delete and update.

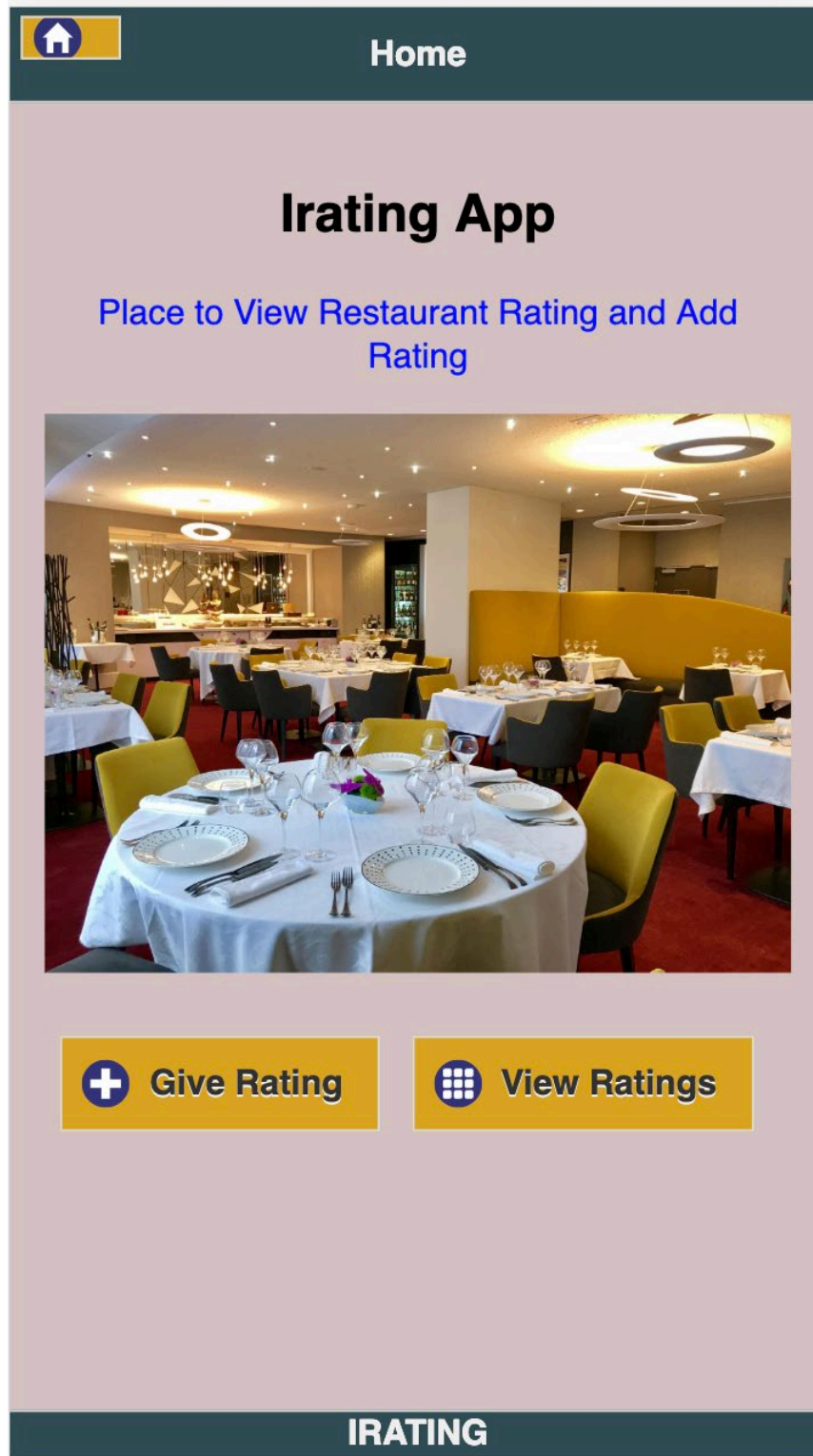
My application fulfils or facilitates all the core features as asked in the requirements.

The strength and special feature of the application is provided in detailed in the evaluation section.

Screenshots of Implemented Features

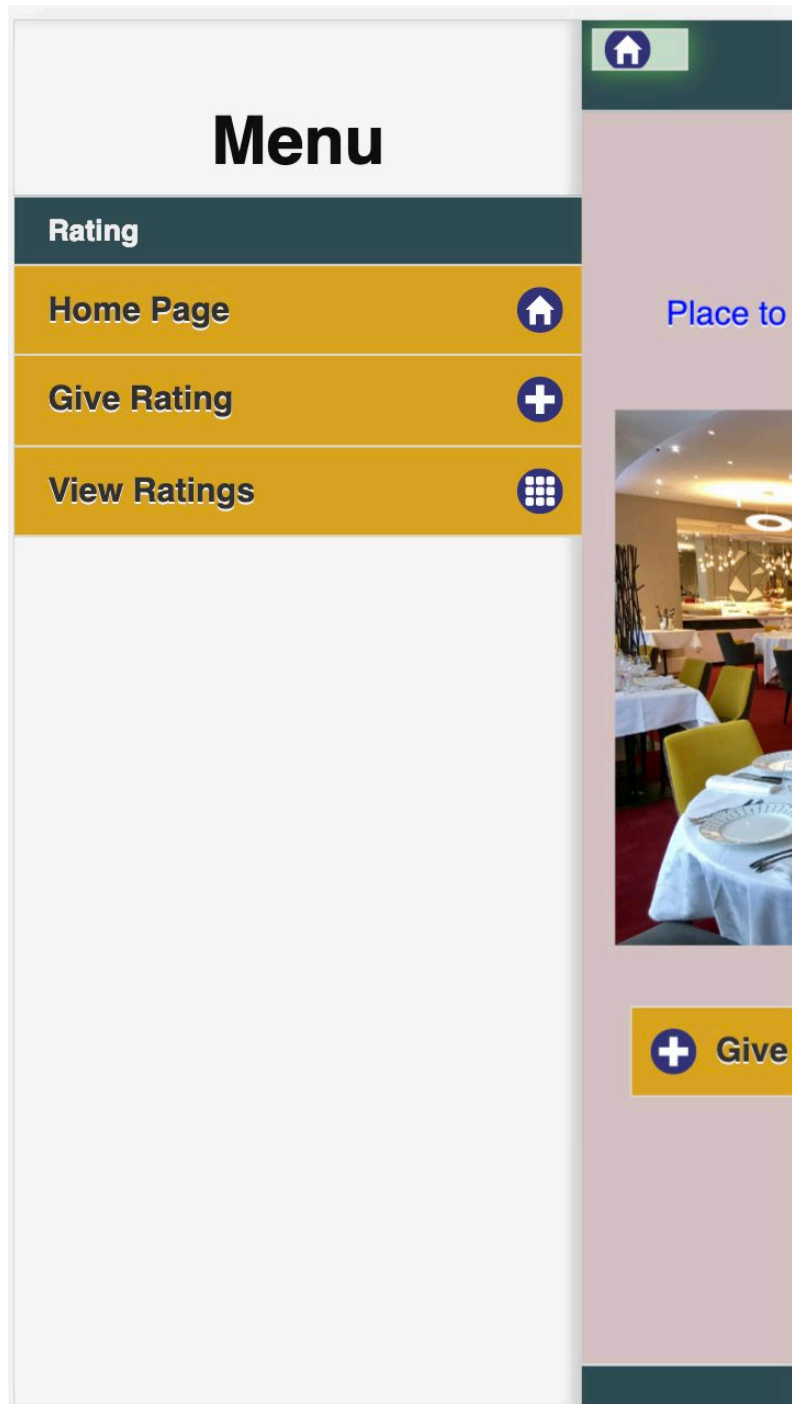
The Home Page

Picture below is the home page of my “Irating Application”. Users can navigate to “Give Rating” and “View Ratings” pages in order to give and view ratings respectively.



Paras Mani Gurung
000884899

In order to navigate from one page to another, panel is also being created. The picture of it is shown below:



Paras Mani Gurung
000884899

Feature a)

Give Feedback

Feedback Form

Restaurant Name*

Name of the restaurant you went

Restaurant Type*

Fast Food

Date and Time of Visit*

dd/mm/yyyy, --:--

Average Meal Price per Person £*

how much you paid for your meal

Format: 120.45 OR 043.00

Service Rating*:

Need to Improve

Okay

Good

Excellent

Cleanliness Rating*:

Need to Improve

Okay

Good

Excellent

Food Quality Rating*:

Need to Improve

Okay

IRATING

Give Feedback

Okay

Good

Excellent

Additional Note

input your name here

Your Good Name*

ADD

REDO

Take Photo

IRATING

Allows users to add all the necessary information about the restaurant. **Take photo button doesn't work.** Use of dropdownlists, radio, buttons and calendar, in order to allow users to input information dynamically.

Restaurant Name*

Testing

Restaurant Type*

Fast Food

Date and Time of Visit*

02/02/2019, --:--

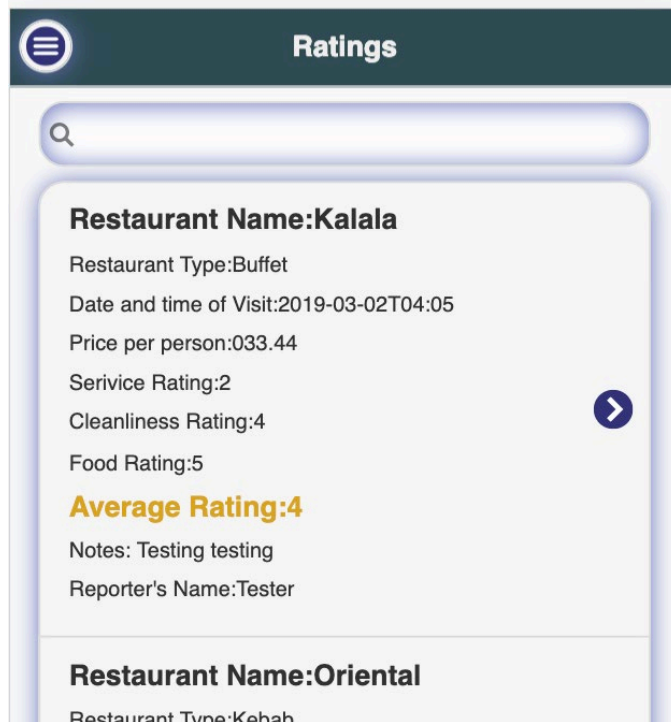
February 2019

Mon	Tue	Wed	Thu	Fri	Sat	Sun
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	1	2	3

Excellent

Cleanliness Rating*:

Feature b)



Users can view all the details they have entered while rating a restaurant. They can also see the total rating (i.e. Average Rating), which is the average rating of service, cleanliness and food quality. The average rating is calculated as the round-up value of total sum of service, cleanliness and quality rating divided by 3.

Feature c)

Validation has been implemented to all the required fields. It guides or forces user to enter all the required information in right format. For examples:

The screenshot shows a 'Give Feedback' form titled 'Feedback Form'. The 'Restaurant Name*' field contains '122'. A tooltip with an exclamation mark icon says 'Please match the format requested.' The 'Restaurant Type*' dropdown is set to 'Fast Food'. The 'Date and Time of Visit*' field contains '02/02/2019, 16:05'. The 'Average Meal Price per Person £*' field contains '012.55' with a format hint 'Format: 120.45 OR 043.00'. The 'Service Rating*' section has three options: 'Need to Improve', 'Okay', and 'Good', each with a radio button.

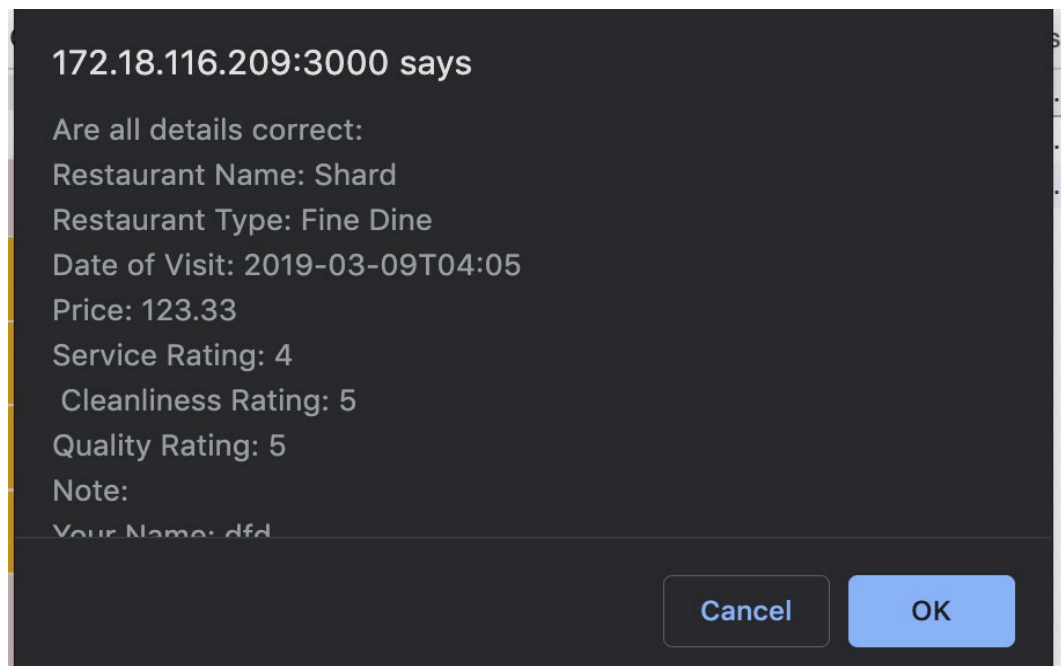
Doesn't allow users to add numbers on the fields where letters required and vice versa.

This screenshot shows the same feedback form. The 'Average Meal Price per Person £*' field contains 'fdgfd'. A tooltip with an exclamation mark icon says 'Please match the format requested.' The 'Service Rating*' section has three options: 'Need to Improve', 'Okay', and 'Good', each with a radio button. The 'Cleanliness Rating*' section is partially visible at the bottom.

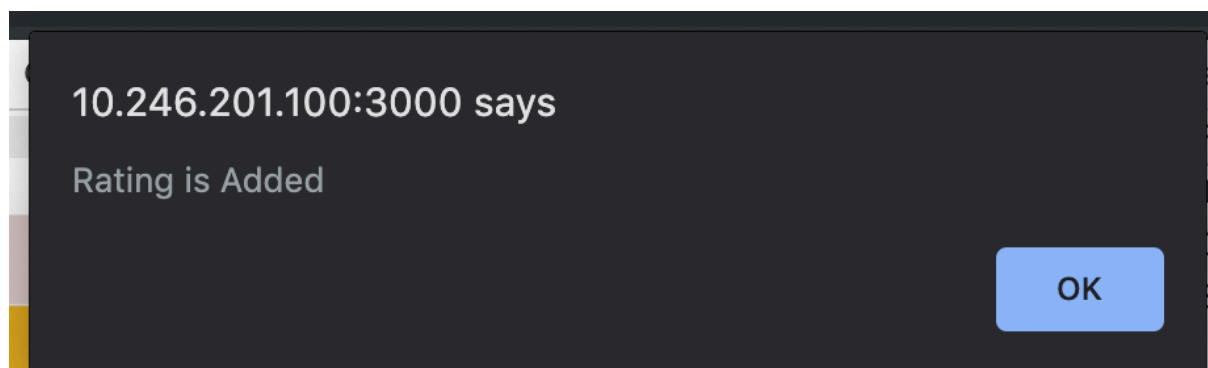
This screenshot shows the 'Service Rating*' section of the form. It has three options: 'Need to Improve', 'Good', and 'Excellent', each with a radio button. A tooltip with an exclamation mark icon says 'Please select one of these options.' The 'Cleanliness Rating*' section is partially visible at the bottom.

None of the required fields can be skipped by the users. Each of the required fields are validated.

This screenshot shows the 'Date and Time of Visit*' field with a dropdown menu showing 'dd/mm/yyyy, --:--'. A tooltip with an exclamation mark icon says 'Please fill in this field.' The 'Average Meal Price per Person £*' field contains '123.33' with a format hint 'Format: 120.45 OR 043.00'. The 'Service Rating*' section has three options: 'Need to Improve', 'Okay', and 'Good', each with a radio button.



When all the required details are entered and add button is pressed. It will enable users to see all the entered details and asks for the confirmation(as shown above). Then, the users can recheck the details and can submit it by clicking on ok button or can cancel it in order to go back and make the changes if required.



After a user confirms to add the rating. It will give notification alert to notify that the rating has been added (as shown above).

Paras Mani Gurung
000884899

Your Good Name*

input your name here

ADD

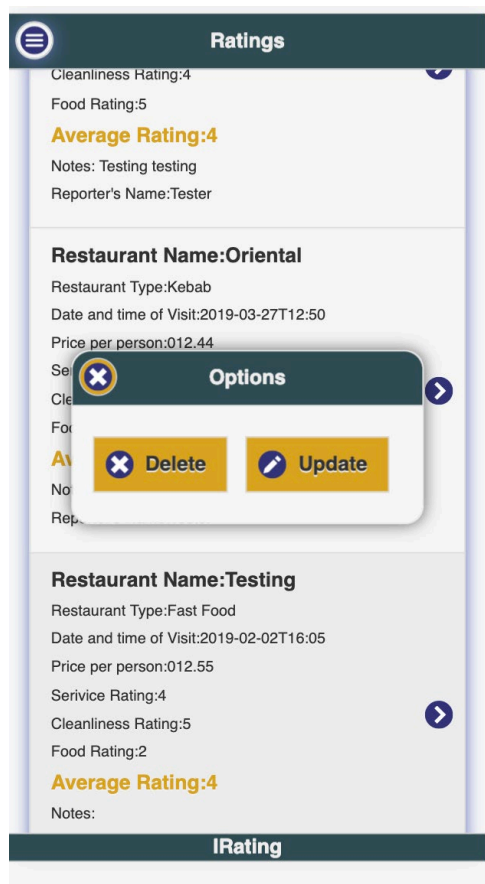
REDO

The users can also clear all the fields, when they want to do so by using the REDO button. It resets all the fields to blanks.

Feature d)

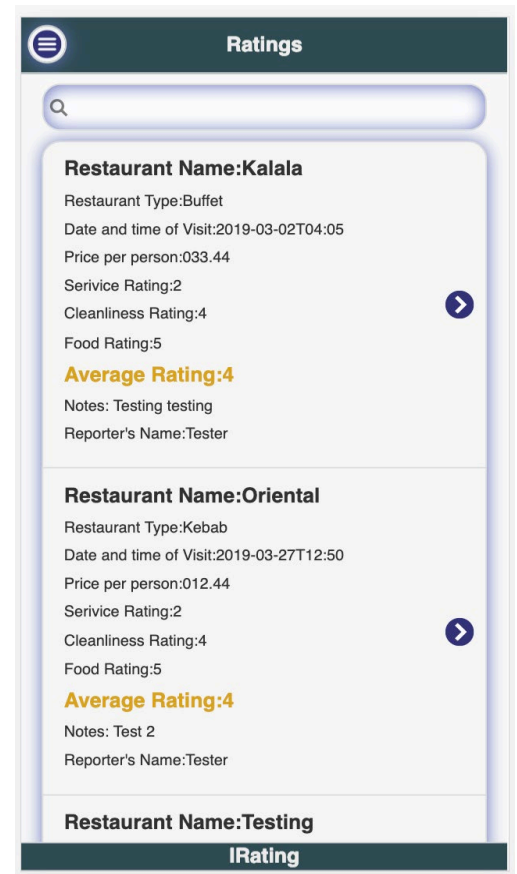
The information entered by the users are stored the web database.

[illegible]



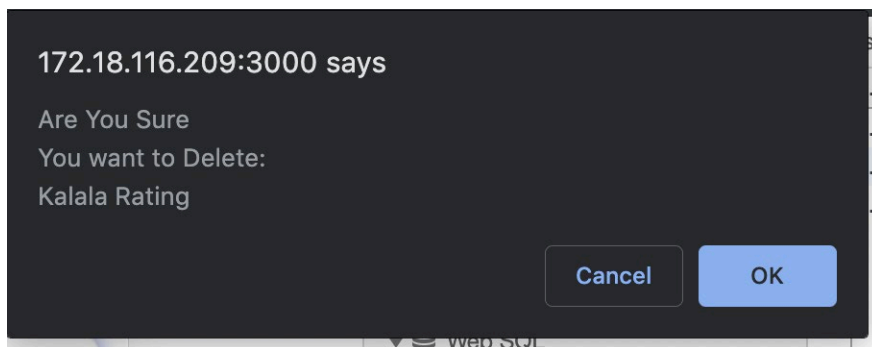
(On right hand side) All the details of the restaurant of all the restaurant that are entered in the app are displayed in the View Ratings page. The ratings are displayed in nicely in a list form.

(On left hand side) It gives us the options to delete and update the rating when clicked on it.



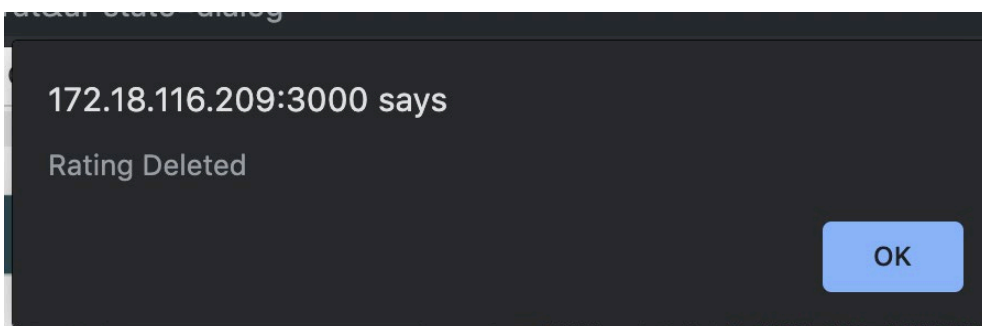
Paras Mani Gurung
000884899

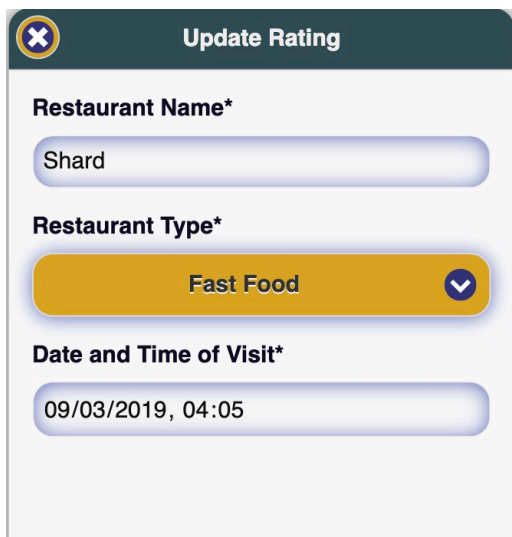
After we chose to delete a rating. It will show an alert as below:



We can cancel our action, if we don't want to delete the rating by clicking on cancel.

When the Ok button is pressed the review is deleted and we will the alert notification as below:

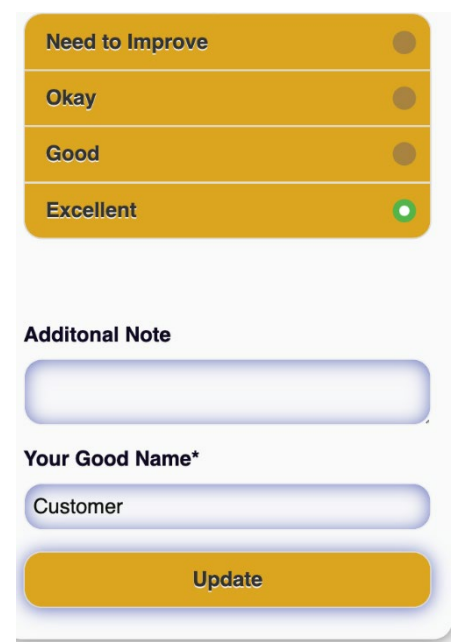




The 'Update Rating' dialog box contains the following fields:

- Restaurant Name***: Text input with 'Shard'.
- Restaurant Type***: Dropdown menu with 'Fast Food' selected.
- Date and Time of Visit***: Text input with '09/03/2019, 04:05'.

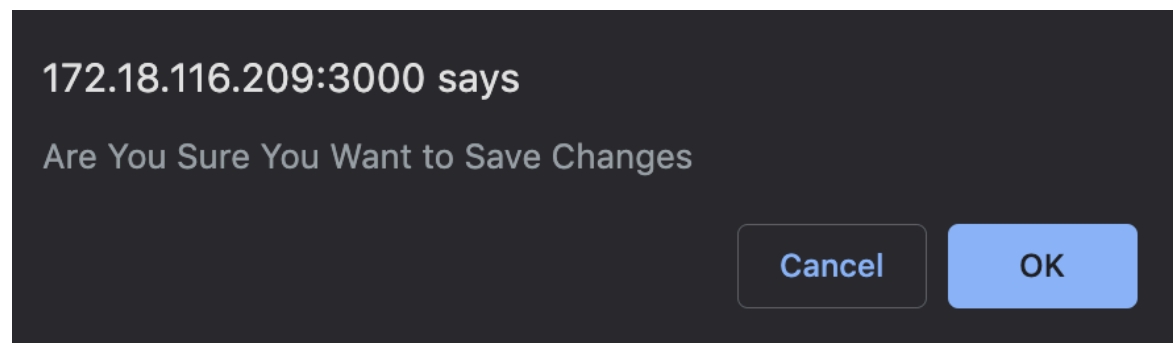
After clicking on a rating, if we chose the update option, update dialog box (as shown in the pictures) will appear and which facilitates us to update the rating.



This section shows the rating options and additional input fields:

- Rating Options**: Four buttons: 'Need to Improve', 'Okay', 'Good', and 'Excellent'. The 'Excellent' button is selected, indicated by a green dot.
- Additional Note**: Text input field.
- Your Good Name***: Text input with 'Customer'.
- Update Button**: A yellow button labeled 'Update'.

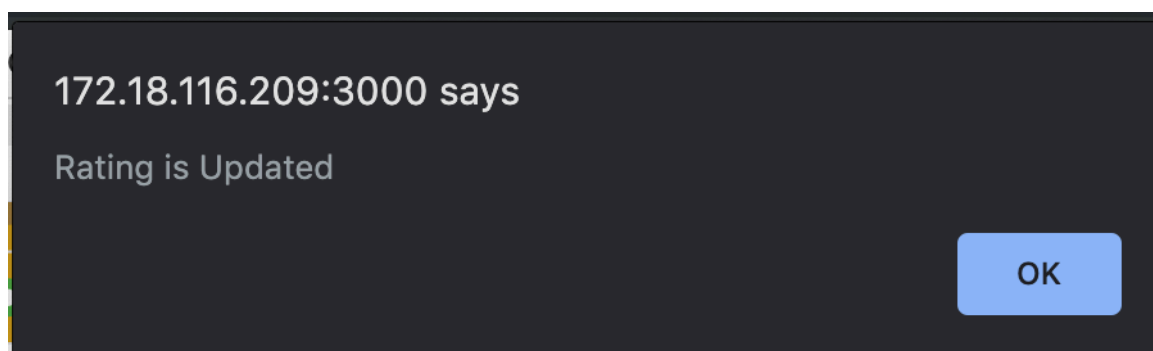
After entering the updated details, we can press update button, then it will ask for the confirmation as shown below:



The confirmation dialog box displays:

- IP Address: 172.18.116.209:3000
- Message: Are You Sure You Want to Save Changes
- Buttons: 'Cancel' and 'OK'.

We can cancel the update and also can save the update. When the update is confirmed by clicking on ok button. We will get the alert notification as shown below:

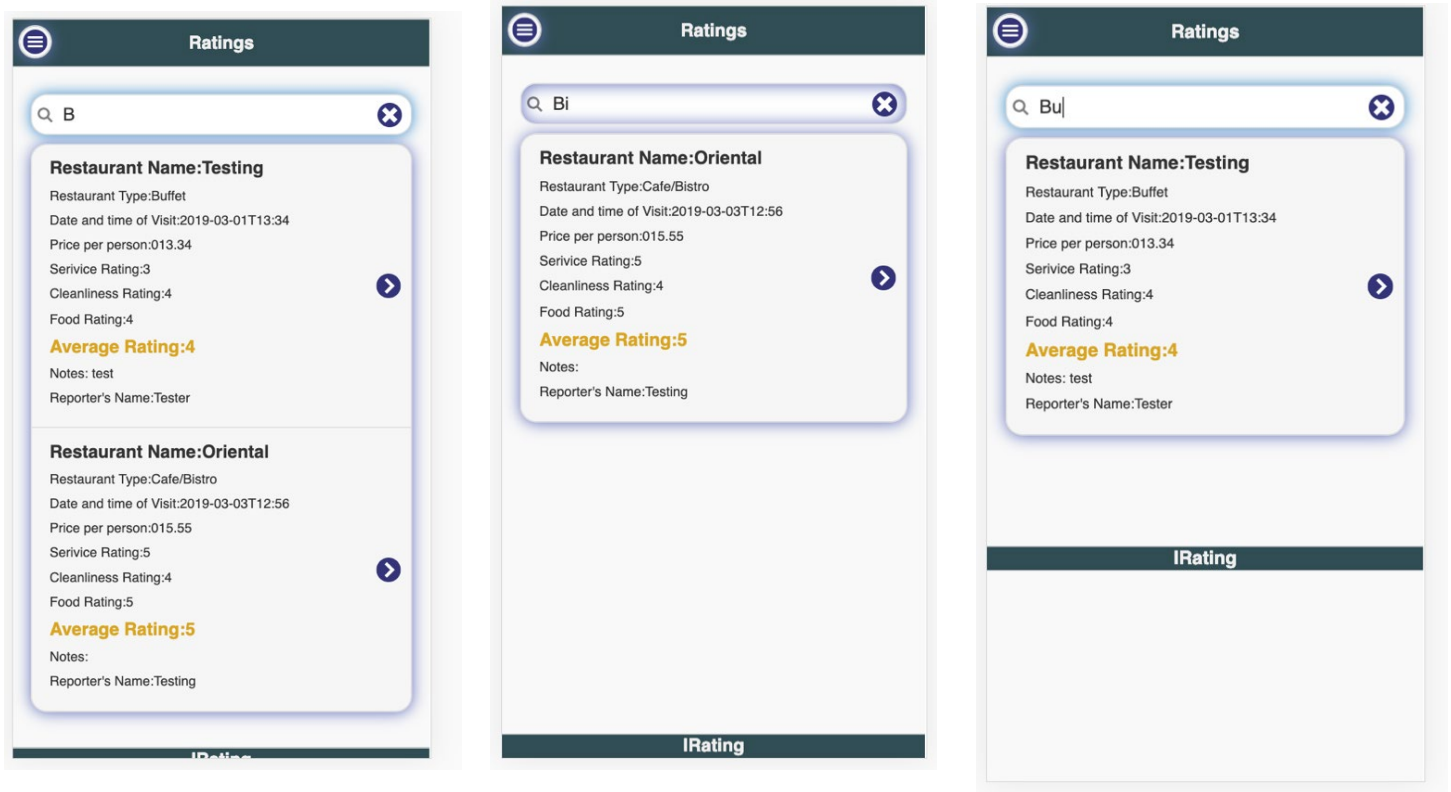


The success alert dialog box displays:

- IP Address: 172.18.116.209:3000
- Message: Rating is Updated
- Button: 'OK'.

Feature e)

The users are easily able to search for a restaurant by typing its name or related information on the search bar. An example: shown below:



Above is an example of search by using restaurant type. We can see how see, how the search results are changed with the change in the search texts.

The screenshot shows a mobile application interface titled 'Ratings'. At the top, there is a search bar with the text 'Oriental' and a clear button (X). Below the search bar, a card displays the following information: 'Restaurant Name:Oriental', 'Restaurant Type:Cafe/Bistro', 'Date and time of Visit:2019-03-03T12:56', 'Price per person:015.55', 'Service Rating:5', 'Cleanliness Rating:4', 'Food Rating:5', 'Average Rating:5' (highlighted in orange), 'Notes:', and 'Reporter's Name:Testing'. A right arrow button is located on the right side of the card. At the bottom of the screen, there is a dark blue bar with the text 'IRating'.

This on the left-hand side is an example of doing search by using the restaurant name.

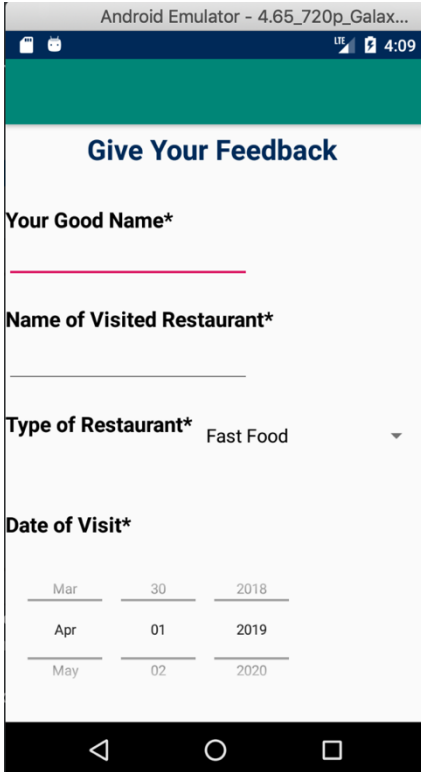
Feature f)

User can easily add extra information or notes about a restaurant in the “Additional Note” field while adding and updating the ratings. While updating, any extra information can be added on the top of the old note and saved or old notes can be cleared and saving only the new information.

The screenshot shows a rating form with the following sections: 'Food Quality Rating*:' with four options: 'Need to Improve', 'Okay' (selected with a green dot), 'Good', and 'Excellent'; 'Additonal Note' (note the typo) with a text input field containing 'Can add any notes or information about restaurant here' (the word 'restaurant' is underlined in red); and 'Your Good Name*' with a text input field containing 'Kim'.

Feature g)

I have created three activities (3 screens) to allow user to enter the information step by step.

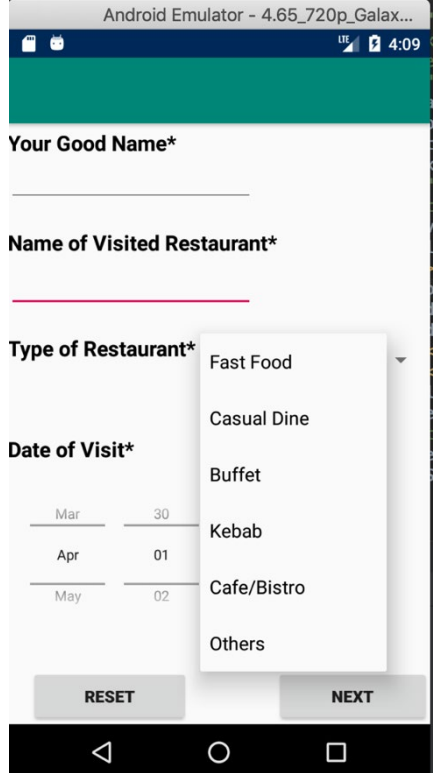


Main activity (screen 1)

It is the first screen where users will enter their name, restaurant name, restaurant type and date of visit.

It allows user to comfortably select a date from the spinner datepicker.

On right hand side, we can see it also allows users to select an option from the dropdown list.



Your Good Name*

Name of Visited Restaurant*

Type of Restaurant* Fast Food

Date of Visit*

Mar 04 2018
Apr 05 2019
May 06 2020

RESET NEXT

A red exclamation mark icon is above the Name field, and a black warning box with white text says "MUST ENTER YOUR NAME".

When the required field are not entered it displays the warning.

Your Good Name*
James

Name of Visited Restaurant*

Type of Restaurant* Fast Food

Date of Visit*

Mar 04 2018
Apr 05 2019
May 06 2020

RESET NEXT

A red exclamation mark icon is above the Restaurant Name field, and a black warning box with white text says "MUST ENTER THE RESTAURANT NAME".

Your Good Name*
3534

Name of Visited Restaurant*

Type of Restaurant* Buffet

Date of Visit*

Mar 30 2018
Apr 01 2019
May 02 2020

RESET NEXT

A red exclamation mark icon is above the Name field, and a black error box with white text says "ENTER ONLY ALPHABETICAL CHARACTER".

It also makes sure that only letters are entered in their name and restaurant name.

Before proceeding to the next page, it asks the users to confirm if the information they have provided is correct or not. If they go for Yes, they will be proceeded to the next page(screen 2), if they go for No, they can edit the detail.

By using the reset button, users can reset all those fields.

Are All Detail Correct

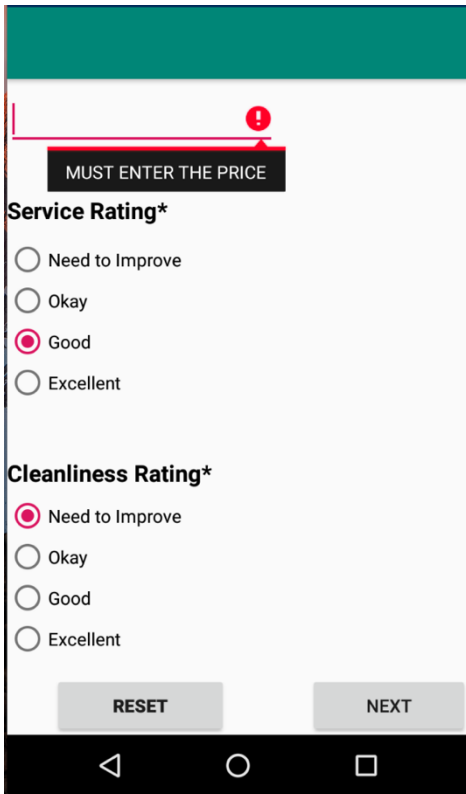
Your Name: James
Restaurant's Name: Tiger
Visted Date: 1/4/2019

NO YES/PROCEED

The dialog box is overlaid on a dimmed version of the registration form.

Page Two Activity (Screen 2)

In this page users will be able to enter the average meal price, cleanliness rating and service rating.



MUST ENTER THE PRICE

Service Rating*

☐ Need to Improve

☐ Okay

☒ Good

☐ Excellent

Cleanliness Rating*

☒ Need to Improve

☐ Okay

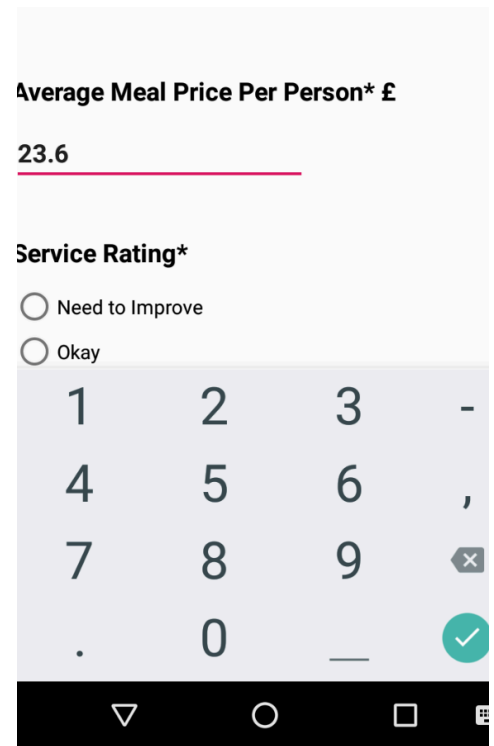
☐ Good

☐ Excellent

RESET **NEXT**

Alerting the users to enter the price before proceeding to next page if the price is not entered.

It only allows users to input numbers, so only numbers and dot (for decimal values) are shown in the keypad.



Average Meal Price Per Person* £

23.6

Service Rating*

☐ Need to Improve

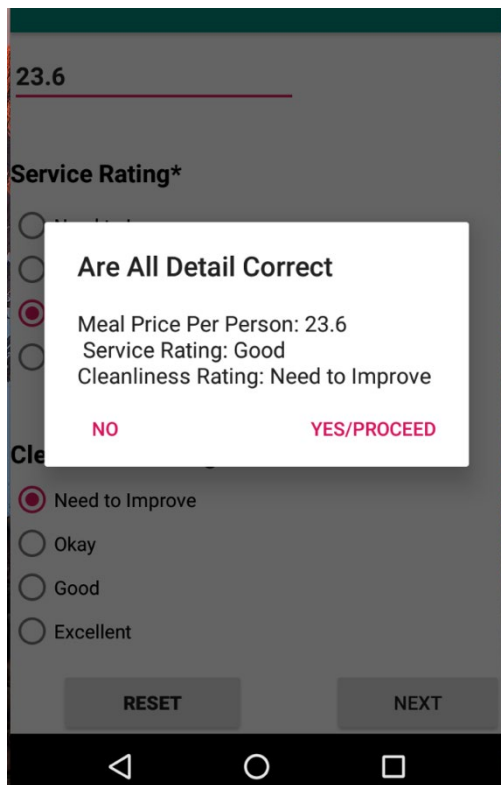
☐ Okay

1 2 3 -

4 5 6 ,

7 8 9 x

. 0 _ ✓

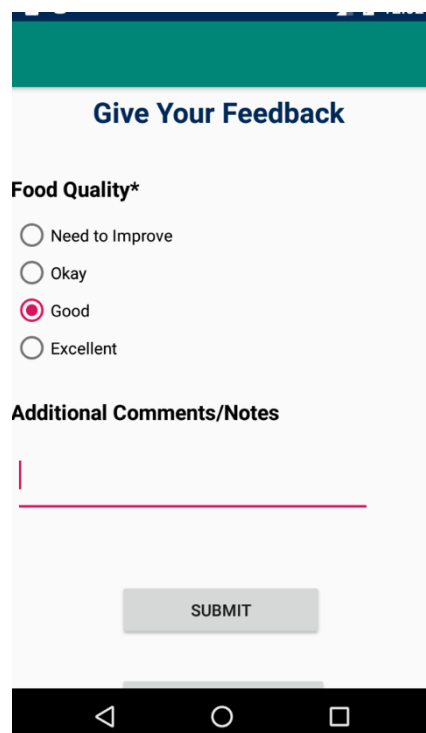


The screenshot shows a mobile app interface. At the top, the value '23.6' is displayed. Below it, the section 'Service Rating*' is visible. A white dialog box is centered on the screen with the title 'Are All Detail Correct'. Inside the dialog, it lists: 'Meal Price Per Person: 23.6', 'Service Rating: Good', and 'Cleanliness Rating: Need to Improve'. At the bottom of the dialog are two buttons: 'NO' and 'YES/PROCEED'. In the background, the 'Service Rating*' section has four radio button options: 'Need to Improve' (selected), 'Okay', 'Good', and 'Excellent'. At the bottom of the form are 'RESET' and 'NEXT' buttons.

It asks the users to confirm if the information they have provided is correct or not. If they go for Yes, they will be proceeded to the next page(screen 3), they go for No, they can edit the detail.

Page Three Activity (Screen 3)

In the screen 3, the user can do the food rating and add notes.



The screenshot shows a mobile app screen titled 'Give Your Feedback'. Under the heading 'Food Quality*', there are four radio button options: 'Need to Improve', 'Okay', 'Good' (which is selected), and 'Excellent'. Below this is a section titled 'Additional Comments/Notes' with a text input field. At the bottom of the screen is a 'SUBMIT' button.

Food Quality*

☐ Need to Improve

☐ Okay

☒ Good

Are All Detail Correct

Food Rating: Good
Notes: Nice place

NO **YES/SUBMIT**

SUBMIT

RESET

When the users click the submit button, it is asking users for the confirmation of the details they have entered.

A default value is saved for the radio buttons initially. Therefore, they are not validated.

Evaluation of the Application

As demanded, my application facilities all the mandatory features as suggested. As most people are familiar to the use of mainstream application, I chose to design my application's design like the other mainstream application. It is to make sure that all the users can easily use my application.

Human computer interaction

During the development process of an application, HCI is one of the important factors that we can't afford to neglect. We need to make sure that the developed system is efficient and comfortable to user. We also need to make sure that the system looks friendly and attractive.

Interactive:

My application provides feedback on actions taken by the users. For example: When the users, submits the review, it asks for the confirmation if they really want to do so. After they confirmed it, it tells the user that the rating is submitted. The application does the same action while deleting and updating the rating.

As most of the users use thumbs for the smartphone touchscreen interaction. Considering an average size thump, I have ensured that there is a suitable distance between the ADD and REDO button. It helps to prevent the users for pressing unwanted button.

Consistent and Simple:

I have used simple and consistent layout, background and texts appropriately. The way the application interact is also consistent. Panels have been used on all the pages to navigate to the different page. My application is straight forward to use, as its operation and functions is similar to a standard mobile application.

Preventing Users to make error:

On the textboxes, I have provided the guideline to users on entering the information. I have also used span to provide the guidelines. These makes an effort to prevent the users from making an error. However, if they miss it, the system will force them to follow those guidelines as the validation is implemented. The use of the confirmation alert on my application also helps to prevent users for making errors.

Facility to correct/undo actions:

My application facilitates users to make changes on their submitted ratings i.e. through

update. They can also delete the ratings if they find them irrelevant or useless. In the rating form, users can reset all the fields they have entered by the REDO button.

Minimised Textual Input:

Radio-buttons, dropdown-list and calendar has been used, in order to ensure that users don't have to keypad much and they perform the work more quickly and comfortably.

Maintainability

All the software development company has admitted that software maintainability involves more developer effort compared to any other phase of the development process. It is very crucial that an application is understood and can be repaired or enhanced by all the programmers. We can save a lot of effort and time while repairing or enhancing our application, if its codes are well structured and commented properly.

In my application, if there are bugs or if we want to add any extra features in the features, we can comfortably debug or add extra features, as my codes are well commented, organised and well structured. Instead of writing all the HTML, CSS styles and JavaScript code in a single file, I have created separate files, where specific codes are written. For example: for opening a web database and for handling the database transactions, codes are in bdhandler.js file and rvhandler.js respectively. The CSS styles for mobile jQuery are store in the 'theme' folder inside the 'css' folder.

Changes that would need to be made for the app to be deployed for live use

According to an article on TechCrunch (Perez, 2016), around 25 percent of mobile application are abandoned after being used only once. So, I need to make sure that my application is efficient and effective before deploying it live.

First of all, I would fix all the bugs and weaknesses in the application which I have mentioned above in the 'bugs and weaknesses' section. I would also add all the additional features mentioned in 'h'. Other amendments that I would do to deploy the application for the live use are:

Create login system:

In order to make the users accountable for their activities, it is very vital to have a login system in the application. Allowing only the users to give ratings who has an account

through registration, will make the system more reliable. However, I would allow any users with an account or without to view all the restaurant ratings and restaurant information. This feature will definitely, improve the security of the system and make it trustworthy.

Facilitate users to like, dislike and comment on ratings and also report any irrelevant ratings:

This functionality would allow users to give like or dislike and comment on rating given by other users. It would also allow the users to report the ratings that are inappropriate. For example: if a user finds a submitted rating deceitful or inappropriate, they can report and then admin can overview the rating and take action on it accordingly.

This will help to ensure that the ratings given by the users are appropriate and improves the effectiveness of the application.

Display of the restaurant ratings:

On the 'View Rating' page I would make the restaurant display according to their average rating. For example: a restaurant with average rating 5, will appear above restaurant with 4 and below, average rating. I would also facilitate the users to sort the restaurant by average meal price.

Reference

Perez, S. (2016). *Nearly 1 in 4 people abandon mobile apps after only one use*. [online] TechCrunch. Available at: https://techcrunch.com/2016/05/31/nearly-1-in-4-people-abandon-mobile-apps-after-only-one-use/?guccounter=1&guce_referrer_us=aHR0cHM6Ly93d3cuaW5mb3JtYXRpb253ZWVrLmNvbS9kZXZvcHMvdGhlLWJlc3Qtd2F5cy10by1ldmFsdWFW0ZS15b3VyLWFwcC9hL2QtaWQvMTMyOTUyMA&guce_referrer_cs=TZq5iNr1z-FCrAjasMhQ2g [Accessed 20 Mar. 2019].

Some of the codes for the application were reused from the following links/website.

https://www.tutorialspoint.com/html5/html5_web_sql.htm

https://www.quanzhanketang.com/jquerymobile/jquerymobile_get_started.html