



YDLC'S RESTAURANT TRACKER PAPER PROTOTYPE



CONNOR RENNISON

Table of Contents

Feature List.....	3
Prototype of Screens of the App.....	4
Login Page.....	4
Invalid Credential Dialog Box	5
Sign Up Page.....	6
Username already in use dialog box.....	7
Home Page.....	7
Restaurant List.....	8
Add a restaurant.....	9
Unfilled fields dialog box	10
Restaurant Details.....	11
Meal List	12
Add a meal	13
Unfilled field dialog box.....	14
Meal Details	15
Principles of Design.....	17
Norman's Principles of Design	17
Visibility.....	17
Feedback.....	17
Constraints	17
Mapping.....	17
Consistency.....	18
Affordance.....	18
Sneiderman.....	¡Error! Marcador no definido.
Consistency.....	19
Shortcut.....	19
Feedback.....	19
Design Dialogue to Yield Closure	19
Error Handling.....	19
Permit Easy Reversal of Actions.....	20
Support Internal Locus of Control	20
Reduce Short-Term Memory Load.....	20
Users Concern.....	21

YDLC'S Restaurant Tracker

Feature List

This application is to be used as an ease of life aid to, in this case, be specifically targeted for the York Designer Lunch Club. The application will need a list of features so that it is able to fulfil the needs of the YDLC. The features are as follows:

- 1) Registration Page: The registration page will be used so that new users to the application will be able to have an account that details such as their full name, username, and password to be saved and will then be able to use the Login Page.
- 2) Login Page: The login page is going to be the opening view that any user that opens the app will see at first. The login page will act to validate that the user that logs in are seeing content for themselves and not content that was isn't. The way that users will log in is a username and password combination.
- 3) List of Restaurants: This view of the app is going to show the user the list of available restaurants, along with a brief description. Beside each restaurant name, there should also be a score that is attributed to that location.
- 4) Restaurant Details: This section would open once the user interacted with the Restaurant from within the aforementioned list of restaurants. The description would hold some key details such as: A picture of the restaurant, some menu items, an average score per item and an average score of the establishment.
- 5) List of Meals: There should be a different view than the list of Restaurants that homes all the meals that have been scored. A user should be able to see details such as, the meal name, the date it was added/had, the restaurant that it was ordered from and the average score that it was given.
- 6) Meal Details: Meals that are listed should be able to be broken down into their individual meal items and scores attached to those items.

Prototype of Screens of the App

Next, I want to visualise the app's different screen that a user will come to. This will provide a visual prototype of the app to help assist with the design structure of the application. These screens will be configured using the iPhone 11 Pro / X's screen resolution of 375 x 812. Although screen resolutions may differ, the core design choices and themes will stay true through devices as close as can be to the design shown in the below screen designs. Across the app there will be feedback of taps on the screen in 2 ways; tapping on the screen will make a slight ripple and when clicking on a button it will go slightly dimmer to signify it being pressed.

Login Page

The first screen that users will see when opening the application for the first time will be the login page. From this page users will be able to login with credentials that they have, however if the user does not yet have an account, they will be able to click the "Sign Up with Us!" button. This will make sure that if new users to the lunch club joins the application, they will have a straightforward path to how to make an account whilst making sure that all users have valid credentials before being able to access the content of the app.

YDLC Restaurant Tracker

Username: _____

Password : _____

Login

Sign Up With Us!

This will be the logo of the app. Any occurrence of this rectangle with the "YDLC Restaurant Tracker" will take place as the logo of the app.

These 2 underlined areas will be input boxes that users will be able to tap into and begin typing their credentials.

The login button will be the initiation of the check of the content entered (if any) into the 'Username' and 'Password' input boxes. This will check the database for the credentials. In the case that no match is found "Invalid credentials" will appear in a dialog box in the centre of the screen. (See next image for a prototype of this dialogue box.) If the credentials are a match the user will then be taken to the 'Home' screen of the application.

The "Sign Up with Us!" button will take the user to the sign-up page.

Invalid Credential Dialog Box

YDLC Restaurant Tracker

Invalid Credentials!

Ok

Username: _____

Password : _____

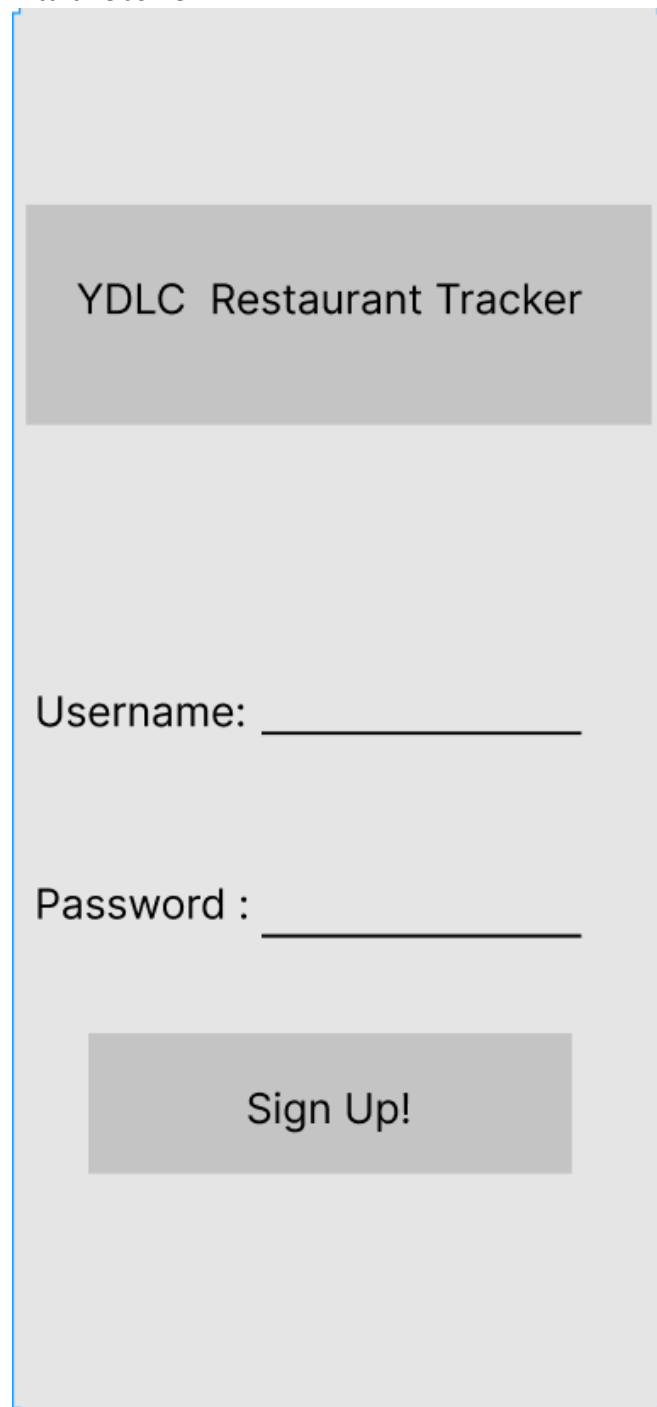
Login

Sign Up With Us!

Here the dialog box will appear on the screen with a button to press "Ok" so that the user can enter the correct credentials or sign up with the application to create credentials to log in. After pressing "Ok", the user would essentially be taken back to the previously displayed screen. This will also shake the screen to provide some feedback to the user.

Sign Up Page

This next screen will be the registration screen of the application that will be accessed by the previous screen's "Sign Up with Us!" button. One aspect of design that I am wanting to be evident throughout the application is consistency in design. Specifically, where the user must look around the screen to find the next interaction point. This is going to make the useability much friendlier and intuitive as well.



When the user clicks the "Sign Up!" button, the application is going to first make sure that the username does not already exist within the database's tables.

If no match has been found, it will then add the Username and password combination to the database and will then take the user back to the 'Login Page' screen so that they can use these credentials to log into the application with.

If a match was found, then instead a dialog box saying "Username already in use" will appear as shown in the next example prototype image.

[Username already in use dialog box](#)

YDLC Restaurant Tracker

This dialog box will appear along with a “Ok” button to dismiss this box. This will then take the user back to the previous screen. This will also shake the screen to provide some feedback to the user.

[Home Page](#)

This screen will serve as the home page for the user and will be the immediate branching off for the user depending on what they would like to see at first. This screen will also be where the user can revisit to choose the content of the application.

YDLC Restaurant Tracker

Picture of a restaurant

This is a placeholder for an image of a restaurant that will be chosen during the development stages.

Restaurant List

Picture of a meal

Meal List

This button will take the user to the ‘Restaurant List’ screen so that they are able to browse the different restaurants currently registered to the app and the score that they have.

This is a placeholder for an image of a meal that will be chosen during the development stages.

This button will take the user to the 'Meal List' screen so that they can view different meals that have been uploaded to the app and the restaurants that have those meals.



Restaurant List

This screen will make up one of the two main screens to the functionality of the application. In this screen the user is going to have a list of restaurants that they will be able to scroll down through. These restaurants will have the name of the restaurant, the average score given to it and a button to see more details of the restaurant. Some other key features of this screen are the ability to add a new restaurant to the list and the 'Home' button so that they can return to the 'Home' page screen.

The reason that I chose to keep the home button more centric to the screen rather than a top left or top right position is to stay in line with my design philosophy of keeping the user's attention to the centre of the screen.

The 'add new restaurant' button will take the user to the 'Add Restaurant' screen that will be displayed later

in this prototype document. This function will be available to all users of the application.

Each instance of a restaurant listed will only have important information that a user will need to see as they scan through the list. This is so that as the list gets larger and larger, useability doesn't suffer as the user will need to read more information when perhaps looking for a particular restaurant.

The 'Details...' buttons will take the user to a screen that will display not only a description that is given by the user that uploaded the restaurant to the app but also an image of the restaurant as well. Initially I did consider having this button open a dropdown of the details however after some drafting of the prototype design I have decided that it would likely make the screen too cluttered and may make it too hard to navigate through the page. This is especially the case if multiple restaurant's details were opened.

YDLC Restaurant Tracker

Home Restaurants

Restaurant Name: _____

Enter a description...

What score would you give this restaurant?:

Upload an Image...

Submit Restaurant

Add a restaurant

Users will be able to add a restaurant to the restaurant list from this screen. This screen has all the features that will be required to add a restaurant to the list. One feature that I decided not to add to this screen was the ability to add meals at this point. This is so that instead I can have this feature in the Meal List screen instead. A benefit to this approach is that users who do not add the restaurant initially have their own way of adding meals to the restaurant rather than one single person adding in everyone's meal.

The user will be able to return either to the 'Home' page or the Restaurant List from either of the buttons displayed. I am wanting to keep navigational buttons such as these in the same place throughout the app to keep the consistency of the application to assist in improving usability.

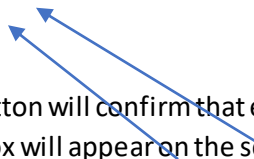
This will be where the user enters the name of the restaurant, the line indicating the input box.

This box will be the area in which the user can add a brief description to the restaurant that they are adding.



The score that the user wants to give the restaurant will be able to be inputted here. Instead of a blank text box for the user to enter any number I have decided that instead there will be a drop down of numbers 1-5. This is so that the score can be limited to those possible scores and prevents scores being set too high or simply invalid input from the user.

The user can upload an image from their mobile phone's gallery when they click on this button.



The 'Submit Restaurant' button will confirm that each field has been filled. If a field is not completed, then a dialog box will appear on the screen as seen in the next prototype image. If all fields have been filled this button will add the restaurant to the list of restaurants and bring the user back to the Restaurant List screen that they came from.

Unfilled fields dialog box

This is what the screen will look like when the user doesn't fill all fields for adding a restaurant and tries clicking the 'Submit Restaurant'. This will also shake the screen to provide some feedback to the user.

Pressing the "Ok" button will bring the user back to the Add a Restaurant screen.



YDLC Restaurant Tracker

Home

Restaurants

Picture of the restaurant

Description of restaurant

Meal	Current Score	Score it!
Name of Meal	Average Score	
Name of Meal	Average Score	
Name of Meal	Average Score	

How do you score this restaurant?

Restaurant Details

The restaurant details screen is going to be a screen that has some of the most features than any other screen in the application due to the amount of content that you can interact with and furthermore effect via your own scoring. This screen will be where users will be able to do most of the ratings on the restaurants and meals.

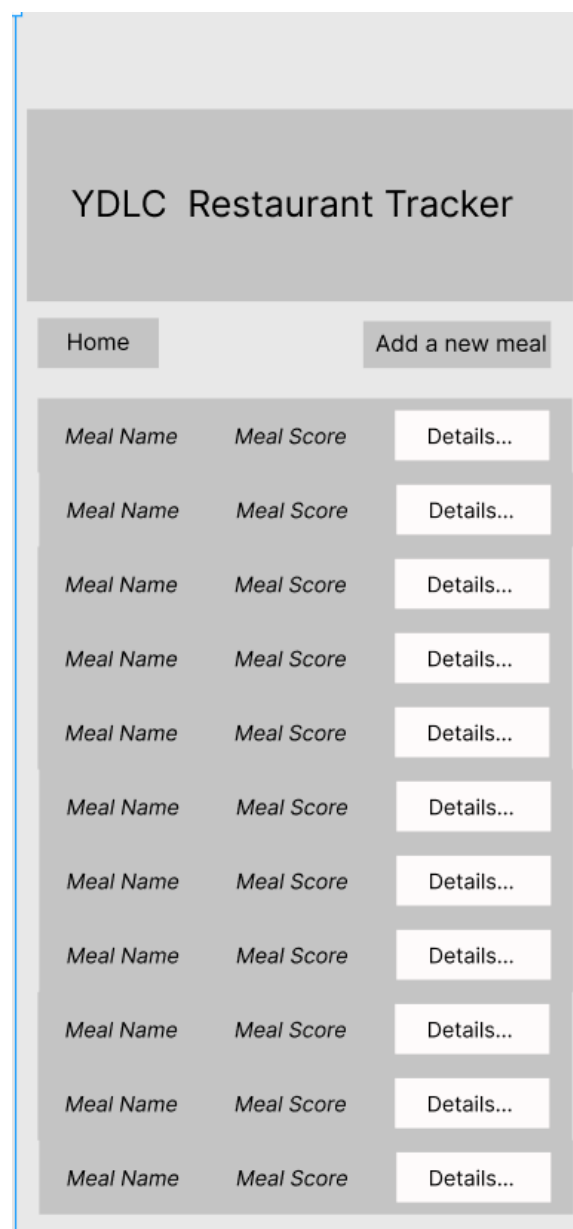
I have kept the buttons for returning to the 'Home' page and the Restaurant list in the same location so that the design stays consistent.

This is a placeholder for the picture of the restaurant that the user will have uploaded during the Add a Restaurant screen

This will be where the description of the restaurant provided by the user will be displayed.

This section of the screen will be dedicated to the meals that are listed to this restaurant. Details such as the name of it, the average score that it currently has as well as a drop-down box of ratings to score it also. This drop-down box will be the same format as the Add a Restaurant screen's scoring method.

At the bottom of the screen the user can add their rating to the restaurant. This will have the consistent drop down of different scores that can be given to meals or restaurants that is used throughout the application.



Meal List

This screen will be the user's portal to the different meals, and they will be able to browse through the meals for ones they particularly like or looking for a meal that is scored highly.

The navigation buttons on this screen reflect the other screen's positions. The only difference is that the "Add a new meal" button will instead take the user to the "Add a meal" screen.

Listed on this screen will be a list of meals that have been added to application. A design choice that I made was that having too much information on this screen would make this screen abnormally cluttered in comparison to the rest of the app. Especially since I want this screen to be comparable to the Restaurant List. For this reason, I have chosen to instead list the name of the

restaurant within the Meal Details screen of the app.

This list of meals will be able to be scrolled through if the list exceeds the space on the screen.

YDLC Restaurant Tracker

Home Meals

Restaurant:

Meal Name:

What items did you have in this meal?

What score would you give this meal?

Submit Meal

[Add a meal](#)

Users will get to this screen by pressing the “Add a new meal” button on the Meal List screen. Here the user will be able to add a meal to the meal list and link it to a pre-existing restaurant.

The navigation buttons will stay in the same place however the “Meals” button will take you back to the Meals List screen so that the user has a way of backing out of the Add a meal screen.

This box will be a drop down of all current restaurants that are added to the database. The reason that I have made this a pre-requisite to adding a meal is to ensure that every meal has a parent restaurant so that all meals are traceable to a location.

Users can enter the name of the meal that they had at the restaurant

Users can enter different food items that they had in this overarching meal

This box will be a scoring drop down of number between 1-5 as seen in previous screens that include scoring interactions. This score will be the meal's score.

When the user clicks the "Submit Meal" button, the application will check to make sure that all fields are completed.

If not, all fields are filled then a dialog box will appear on the screen as will be demonstrated in the next prototype screenshot.

If all fields are filled, then the application will add the meal to the meal list and take the user back to the Meal List screen.

[Unfilled field dialog box](#)

This is what the screen will look like when the user doesn't fill all fields for adding a meal and tries clicking the 'Submit Meal'. This will also shake the screen to provide some feedback to the user.

Pressing the "Ok" button will bring the user back to the Add a meal screen.

YDLC Restaurant Tracker

Home Meals

Please fill all fields to add this meal

Ok

What items did you have in this meal?

What score would you give this meal?

Submit Meal



YDLC Restaurant Tracker

Home

Meals

Restaurant Name

Meal Name

List of food items in meal

Date Added

Meal Score:

Meal Score

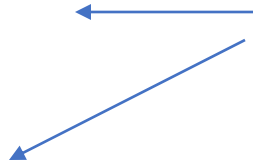
Meal Details

This screen is not going to be as functionally complex as the Restaurant Details screen as the meal is not something that will be scored by anyone else but the person that added the meal.

The navigation buttons will stay the same as the Add a meal screen.

The restaurant name and meal name that was set by the user who added the meal will be displayed here.

Here will be the list of food items that was detailed by the user when the meal was added to the app along with the date that meal was uploaded.



This section of the screen will display the score for the meal that was given in large text as this is going to be key information for the user.



Principles of Design

Whilst designing YDLC's Restaurant Tracker, I have been keeping in mind the principles of design that are outlined by both Norman and Shneiderman.

Norman's Principles of Design

Visibility

During the designing process of the login screen, I kept in mind Norman's visibility principle and therefore made sure that the sign-up button isn't tucked away or in a corner at all and instead placed closer to the middle and designed it to be underneath the "Login" button to keep the user's eyes to the centre of the screen. This is preventing the user to have to look around the screen to find the "Sign Up" button.

Feedback

Another principle that Norman had defined was feedback, feedback is important so that the user is aware of when operations take place and how their interactions effect the application. It can also demonstrate right or wrong options to the user. Feedback that I have integrated into the design of YDLC's Restaurant Tracker is done by a few methods. Firstly, by making it so that taps on the screen will cause a small ripple to appear where the user has tapped on the screen. This shows some interaction that the user is having with the application visually. Another way that I designed the app to provide feedback is by having buttons grey out after being pressed to give the user some indications of which buttons are being pressed and if it has indeed been pressed. Finally, I believe the best example of feedback being demonstrated in the app is the shake of the screen when the user encounters an error such as a username already being in use or not all fields of a meal that the user is trying to register to app being filled.

Constraints

The principle of constraints proposed by Norman is prevent possible actions that the user could take that would lead to errors. This prevents the app from becoming a maze of errors that the user must navigate through. An example of constraints that I included in my prototype design of the application is the scoring system. The way the user will score a meal or restaurant is by clicking a dropdown box and selecting a number between 1-5. This means that the user can only input a score that would make sense to the system and unable to input a letter, symbol, or higher/lower numerical value than 1-5. This helps cut down on the number of errors that the user can experience and thus making the useability of the application smoother with the help of constraints.

Mapping

Mapping is a principle that can assist users to understand a function of a component based on its arrangement. I took this into consideration when I made sure to have the "Submit Meal" or "Submit Restaurant" buttons in the 'Add a meal' or 'Add a restaurant' screens. I arranged the buttons to be at the bottom of all the fields in the screens to help the user understand that they work from top to bottom as is natural when looking at a screen. Not having any fields to complete below these buttons helps the user prevent forgetting to fill a field and discern that they need to complete the previous fields before the button.

Consistency

Consistency is covered by both Norman and Shneiderman in their principles of design and is something that I kept in mind throughout the design process. Whilst Norman focuses more on the simplification of large complex behaviours through categorisation and similar controls for similar operations, Shneiderman focuses more on consistency of layout. An example of a similar control for a similar function in the prototype would absolutely be the adding of meals and restaurants. The 2 operations are similar in action of adding something new to the app's content and therefore I made sure to have their layouts very similar. This is so that if a user had only added meals but had never added a restaurant, then when they came to the 'Add a restaurant' screen, it would seem familiar and would give them a strong sense of what they need to do based on the comparable design to the 'Add a meal' screen.

YDLC's Restaurant Tracker's consistency of layout would be most obviously exemplified by the location of the 'Home' button and both the 'Restaurants' and 'Meals' buttons. Wherever a user is on the application apart from the 'Home' page after they have logged in, they will have a 'Home' button that is placed in the exact same location throughout all subsequent screens. This means that the user can at any point go back to the 'Home' screen that can serve as a hub for activity on the app. Furthermore, the Restaurants and Meals buttons are in the same places and the user will just see the relevant button for whichever branch of the application that they are on, whether that be the restaurant or the meals branch.

Affordance

Affordance is a design principle that is essentially an attribute of a component that helps the user understand how to use that component. An example of affordance in YDLC Restaurant Tracker would be the large typing box in the 'Add a meal' screen to signify that the user should type in that box.

Schneiderman

Consistency

YDLC's Restaurant Tracker's consistency of layout would be most obviously exemplified by the location of the 'Home' button and both the 'Restaurants' and 'Meals' buttons. Wherever a user is on the application apart from the 'Home' page after they have logged in, they will have a 'Home' button that is placed in the exact same location throughout all subsequent screens. This means that the user can at any point go back to the 'Home' screen that can serve as a hub for activity on the app. Furthermore, the Restaurants and Meals buttons are in the same places and the user will just see the relevant button for whichever branch of the application that they are on, whether that be the restaurant or the meals branch.

Shortcut

Shortcuts is a design principle that helps the user reduce the number of interactions with the app and allows them to get from A to B efficiently. This helps the usability of the app and preventing it from becoming a labyrinth type of design where users need to interact with a lot of components of the app to get to where they need to be. An example of YDLC's Restaurant Tracker having this principle integrating into the prototype would be the use of the 'Home' button on all subsequent screen after the user has logged in. This means that at any given point the user can start back at the home page of the app with one interaction instead of having a 'Back' button or something similar.

Feedback

The feedback principle is something that I covered in the Norman's Feedback.

Design Dialogue to Yield Closure

Design Dialogue to Yield Closure, in essence, is organising sequences of actions into groups with a beginning, middle and end. An example of this principle in use in the prototype of the application is adding a meal or restaurant. The beginning of a sequence of actions to create a restaurant for example is to first click the "Add a restaurant" button, next the app will take you to the 'Add a restaurant' screen. The middle action for the user would fill out the fields that is required to create a restaurant, such as providing a name, a description and a score. The end action would be pressing the "Submit Restaurant" button, this would signify the end of the sequence of actions for the users as it loops the user back to the beginning of the sequence of actions by taking them to the Restaurant List again. This sequence is essentially the same for the adding a meal to the app.

Error Handling

Shneiderman puts forward with error handling as a principle, that the design of the application should prevent the user from making serious errors as much as possible. In the case of an error being made, the system should be able to detect the error and offer a simple mechanism for handling this error. An example of an error that I feel that I have prevented when keeping this principle in mind is by making sure that usernames cannot be the same and if a username that has already been taken is used when signing up for the app, a dialog box appears and says, "Username already taken". This error dialog gives the user feedback not only was the account creation unsuccessful but also the reason why it was unsuccessful.

Permit Easy Reversal of Actions

This principle defines the importance to involve features that can relieve the anxiety to users that worry that errors cannot be undone. Reversibility is a principle that I thought of especially when making sure that there were navigation buttons to take the user back out of the 'Add a meal' or 'Add a restaurant' screens. I did this so that if a user was unfamiliar with the options of adding a restaurant or meal then they could open the screen and see what fields were required without having to be locked into making one. This prevents the anxiety of not having all the information to completely add a meal or restaurant and gives the user the option to back out of that sequence of actions.

Support Internal Locus of Control

In YDLC's Restaurant tracker, support Internal Locus of Control as a principle is kept to consistency by having almost no actions that is initiated by the system and is completely in the hands of the user. The app is very much designed to be one that the user has no requirement to add a meal or restaurant and can simply use it to browse current scores if they so wish.

Reduce Short-Term Memory Load

A great example of reducing the short-term memory load of the information that the application will put in front of the user at any given time can be shown by example in the design of the Restaurant List. The Restaurant List screen does not include details about the restaurant as I feel this would clutter the list page too much and is not something that a user would need to quick-glance and look for when trying to browse the restaurant list. Instead, the solution to this was to instead put the description of the restaurant in the Restaurant Details screen as it just made more sense this way from a design view.

Users Concern

User inclusivity is paramount especially for an application that features predominantly York based locations, York being a high traffic tourist location of people of all backgrounds and walks of life. This is something that I will be conscious of whilst developing the design of the YDLC Restaurant Tracker. An example of this is that I plan on having multi-language support for the app. This is going to be important, especially being a city of many cultures, but furthermore for locations outside of York. This is an example of a simple change that can be made to the application that will propel the application's usability to different types of users ten-fold.

Another user concern that I would like to address is the ability to use the app out and about the city. As someone who lives in York myself, I am totally sympathetic that signal around the city can be inconsistent and can cause major issues with loading of some more demanding apps. The solution to this is for me to make sure that I can make this app to be as undemanding as I can get it without sacrificing the quality of product at the end. This means cutting down on resource traffic that a user will need to run the app and reducing the number of images that the user must load to get the information that they need. An example of this that I have already shown in the prototype design is the lack of pictures of restaurants on the Restaurant List. This way the user doesn't have to load dozens of photos of restaurants that they didn't even particularly choose to investigate.

Another user concern that making the app lightweight in terms of data storage usage is the download size of the installation by itself. Sometimes, storage is something that mobile users can struggle with and the last thing that this app should be is a large memory sink for any mobile and to be a quick installation that can be used as a lite tool whilst looking for the next restaurant location and not something you're going to have to uninstall other apps to accommodate.