

CMP3035M Cross-Platform Development

Design

Overview

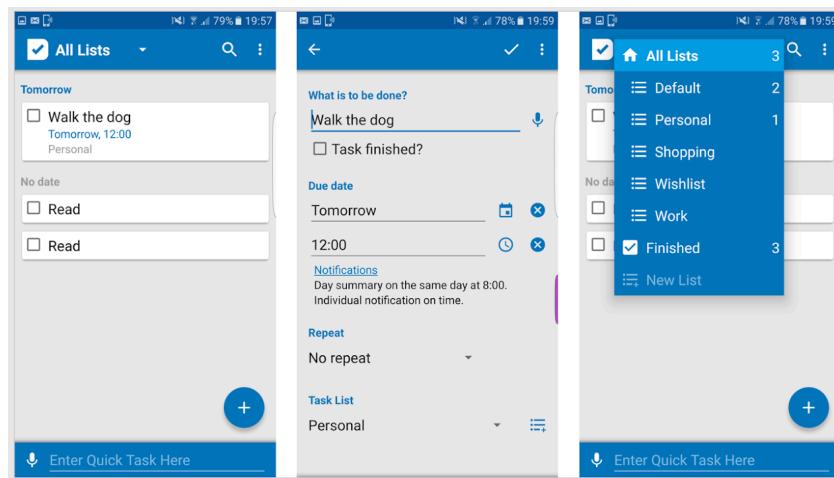
The application that I aim to create will be based around making its users more productive. The way that I want to achieve this is by making an application that users can input what they want to achieve throughout the day. When a user completes a task, they will receive feedback on scores such as tasks completed and failed. The largest, most interesting feature that i want to implement is a type of game where a plant will grow as the user completes their tasks, or die if they fail them.

Application analysis

The task list idea is fairly popular as an application, a few examples that i found are:

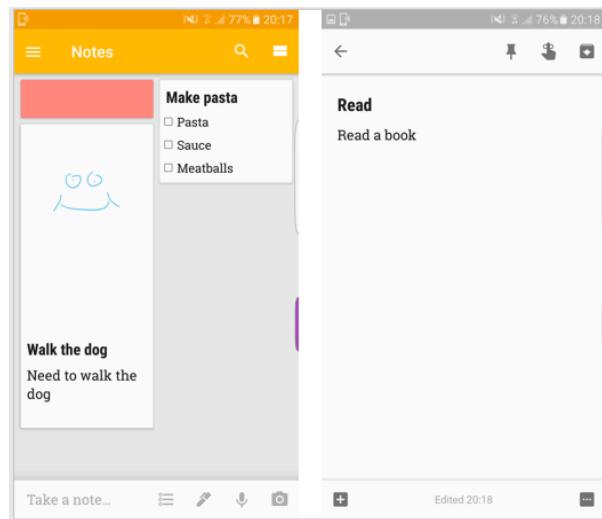
- SplenDO (Splendid Apps)
- Google Keep - notes(Google inc.)
- Todoist (Doist)
- Memorigi (Randy Saborio)
- Ike (Pocket Universe)

Given this list of applications i have found i will analyse the interesting ones.

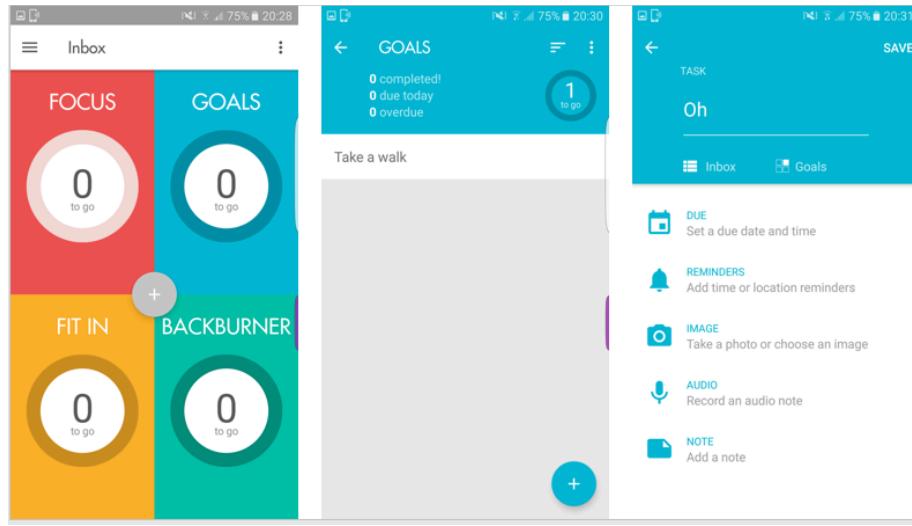


The application SplenDO by Splendid Apps is a well made application. The ui of the application is simple and easy to use. The task list allows the user to add a task name, due date, time and what lists of tasks to add it to. The ability to have multiple task lists is an added feature that most basic task lists do not have. This is helpful to users since a task list can get confusing if everything is part of the same list. Another really good, but not needed feature of this application is the ability to use

speech to record a task. This can be useful for users without much time to stop and type in their next task. Users can also make a quick task where they only input the task name. This is useful for users because they can use this feature if they need to remember to do something without having a deadline. Users can search task lists also, this can help with searching through a larger task list. A downside i noticed with this application, if you enter the same task more than once, the application does not give an alert telling the user that the task is already there. This can be a problem with larger lists and users being forgetful, which can then cause redundant tasks that set out with the same goals as others. Something else that i noticed with this application is that it makes use of notifications to show the user their next task, along with adding a new task and managing settings. This can be useful for users that are on the go, rather than opening the application and adding a task, all they need is to swipe down and press the add button.



Google Keep - notes by Google is another application that i analysed. This application is very different from SplenDO. SplenDO is user friendly application that does not take much learning in order to make use of it. Google Keep seems to be aimed towards the more technologically minded user, this application has many more features than SplenDO. The application is presented in less of a task list and focuses towards taking notes on tasks. The user has the ability to add images, sound recordings and drawings to their notes. These features might not always be used, but they are always good to have for certain things. Having the ability to add tickboxes in a list is extremely useful for tasks as users can set smaller goals in order to achieve the larger aim. In terms of organisation, users can colour coordinate tasks this helps with separating aims from one another, making the application more user friendly. Initially when i opened the application i found all the features to be overwhelming, this is something that can cause users to not use your application as it can be confusing and hard to use. Another feature to take note of is that the application makes use of the Google drive, so that users can store their tasks online and/or archive them.



The final application that I analysed is Ike. This application appeared to be the most interesting. Upon opening the application the user is presented with a get started page where it explains the name of the application, originating from Dwight "Ike" Eisenhower, and the main functions of the application. This application seems to be aimed more towards managerial users. The task list makes use of 4 quadrants, Focus, Goals, Fit in and Backburner. Each quadrant is a different level of urgency, with focus being the most important. Each section then has its own task input system with the ability to add a date, reminder image audio or a note. From looking at other applications these features seem to be important to the task list idea and should be something i take into consideration. For each section the user is given statistics about it such as completed tasks, tasks that are due and tasks that are overdue. This is useful information for users so that they can see their current progress on a section along with what needs to be done soon. Users are also given the amount of tasks they have left to complete, this can help to motivate them to work on the list and finish it.

User scenario

Target audience

- Age 18-21
- Students

Needs

- Prevent procrastination
- Become productive
- Prevent distractions
- Keep focused
- Meet deadlines
- Statistics
- Reward system

Persona

- Computer science student
- Male
- Trouble attending lectures and workshops
- Struggles with daily tasks
- Procrastinates
- Age 20
- Gamer

Scenario

The student has deadlines in the following weeks, but they find it hard to start on their assignments without getting distracted by other things. The user tends to prioritise other things such as gaming. The user also finds it hard to get to sleep at a good time and getting up in time for their lectures.

Requirements

From the user scenario above, it is important for my application to have the ability to create tasks, as well as granting a reward system for completing them. Something else that the user may want is the ability to see their completion statistics. The user finds it hard to keep focused, this is something that i need to take into account and try to maintain their attention to their current task.

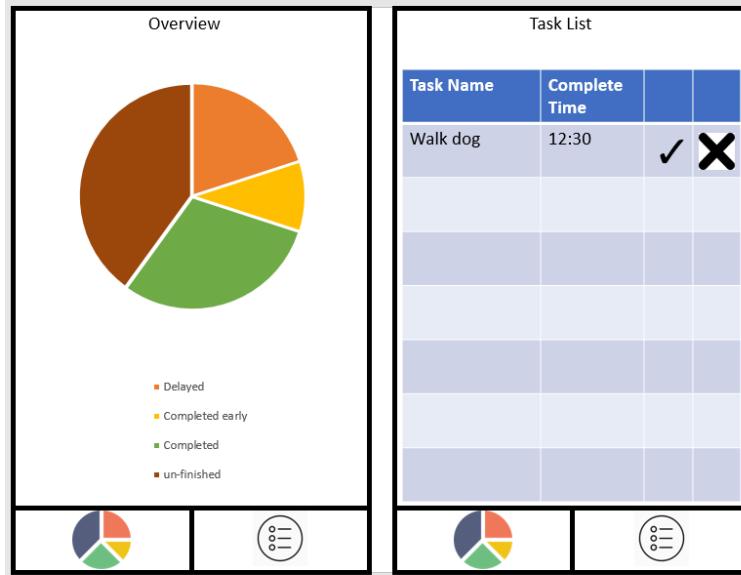
Prototype

Prototype 1



Prototype 1 is the initial design of my application. I wanted users to be able to view their progress on their task lists. Another feature that i wanted the application to have is for the user to be able to look at their month, and add tasks for days ahead of time. The task list allows the user to add a task name along with time and if they have completed it.

Prototype 2



In my second prototype i decided to design more to user friendly features. I wanted to have a toolbar that can be used to navigate the application, also i wanted it to be at the bottom so that users can add navigate using one hand. Also i decided to take away the monthly task list and condense my idea around planning for the day, rather than covering a larger time space, having the overview for keeping track of totals.

Prototype Evaluation

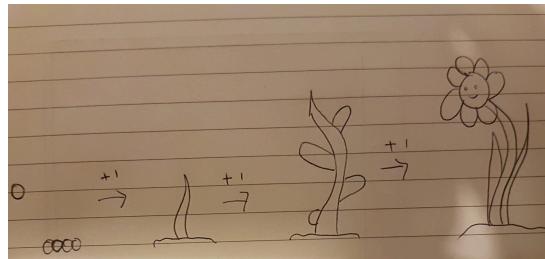
The prototype that I created was an informative idea on showing users how much progress they made as they complete tasks. The application was very simple and needed more to it in terms of function. Something that I have thought about doing is adding some kind of reward, other than values on the pie chart increasing.

Mood Board



The mood board that I created helped me to figure out what I wanted the final implementation to achieve, also what additional feature that I wanted to add. I thought that the idea of having a plant grow as you completed tasks was an interesting idea. This would help motivate the user to complete more tasks. Also along with this, if they failed a lot of tasks the plant will begin to die. This is another method of motivation to make the user get back on track and help the plant to grow.

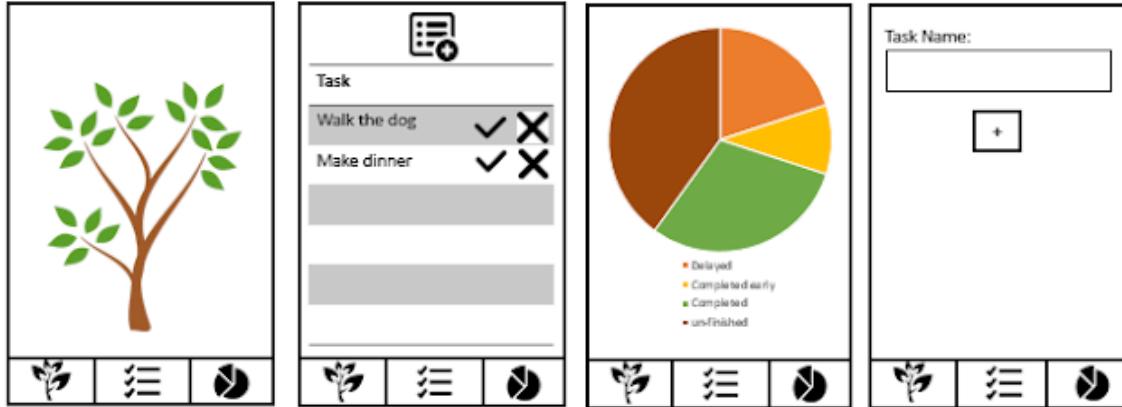
Grow Sketch



I drew a basic sketch of the stages that I wanted the plant to grow through. A problem that I came across was that what happens when a plant is grown. The user would have no reason to carry on, since there was no reward. Taking this into account I thought that the user being able to grow

multiple plants was a good feature to implement, with the application counting how many they grow.

Final Prototype



Taking everything into consideration, I decided to create a final prototype of all the features and the layout of the application that I wanted. I wanted a simple and consistent navigation bar on each page. This is so that the application is simple and easy to use. I wanted the plant and pie chart to be big and clear. The tasklist has been simplified to accommodate for task name and if the user has succeeded or failed. I also wanted for there to be a button that takes the user to another window so that they can enter a task on another window. This was so that the application was simpler and easier to look at. I think that the amount of pages that I have used is enough, but not too much that the user is overwhelmed.

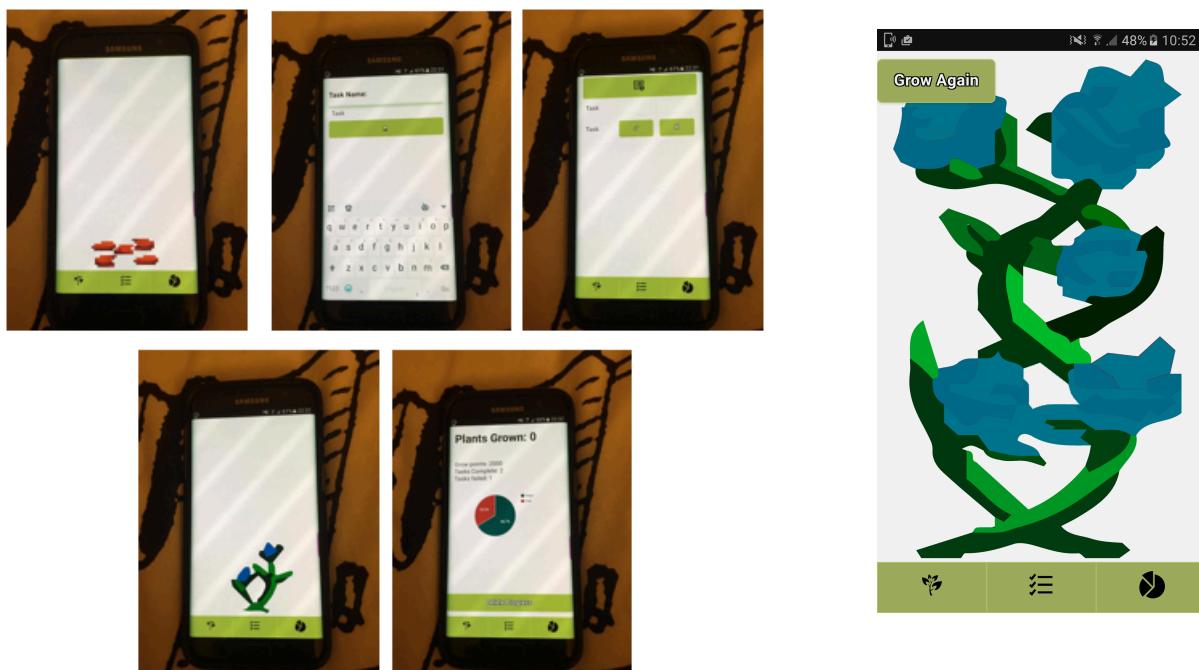
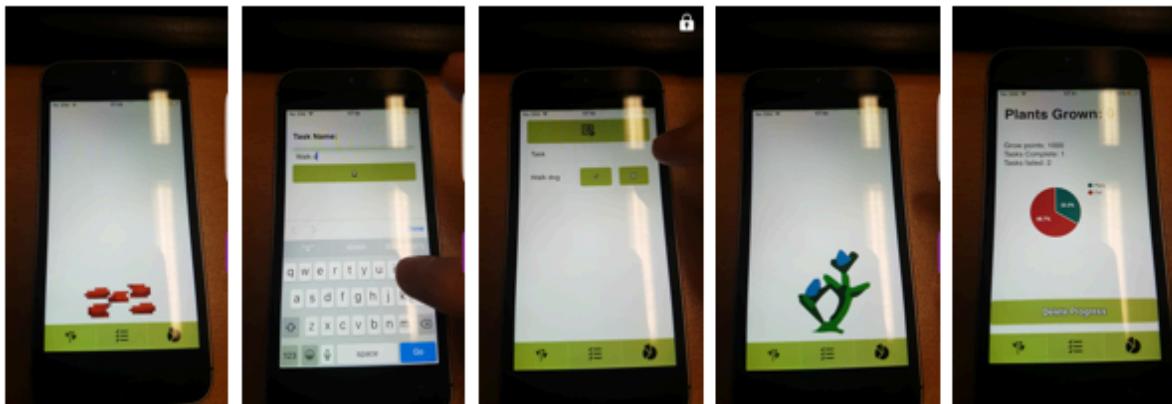
Cross-Platform implementation

The final implementation of my application stuck to the final prototype that I made. The features mostly remained the same throughout development. The user can create tasks. Once a task is created it is saved to local storage, this is so that if the user closes the application, their progress is not deleted. When the user feels they have completed or failed their task they can tick or cross it off. If they tick it off, then the completed tasks gain a point and the plant grows. If the user fails a task then they lose a point and then the plant begins to die. These points are also used in order to figure out their percentage completion rate, which is then displayed on the pie chart. I have implemented a few features that I did not originally define in my prototype. The ability to grow additional plants was an additional feature that I implemented. I had mentioned implementing this in my design, the reason for doing so was that the user would not have an end goal once they had grown the first plant. With the ability to grow more, then the user is more likely to keep using the application. The

other feature that i implemented was the ability to clear all of the apps data. This is because the user may want to start over if they feel that they have failed too much.

Deployment

Iphone



Android

From the screenshots on both Iphone and Android, you can see that the application runs the same on both. The reason for this being that when I set the width and height of components I used percentages instead of pixel values, for example height: 80% instead of height: 400px.

Reflection

Design and development

The design and development of creating a cross platform application is efficient when compared to developing a single application for each operating system. For companies that create applications such as Instagram and snapchat, it saves a lot of time effort and money developing an application with cross platform. Another advantage to cross platform is that it is fairly simple implement, since it uses HTML, CSS and Javascript.

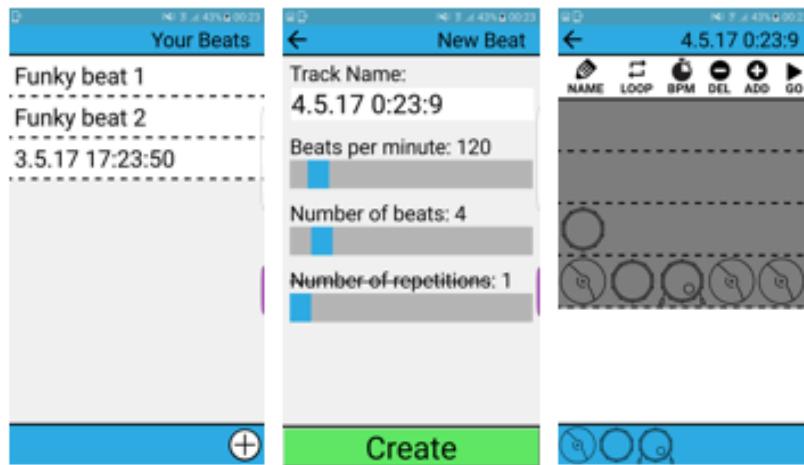
One of the biggest disadvantages to cross platform development is that the applications do not feel like they are developed for the operating system they are running on. Each platform has its own unique style, and this can be lost when developing a cross platform application. Another disadvantage to cross platform is that user experience can differ to other applications. For example application layouts on both systems can be hard to accommodate for, since buttons can be in different places and users expect different things. System specific features can be hard to implement such as notifications since each operating system has its own method, that works differently to the other.

Personal Experience

Overall I enjoyed the cross-platform module a lot. The module had a gradual build up to the end, the assignment was something we were working on throughout the semester in each workshop. This is something that i preferred over other modules because it can feel rushed when an assignment is done within the final week. The skills I gained from developing for cross-platform are something that i will definitely use in the future. Along with the cross platform skills I learned a lot about HTML, Java and CSS. These skills are something that I felt I was lacking in before doing this Module. I feel as though I did well on developing my application, I achieved everything i wanted to in this module. Some difficulties that i had were with local storage, i had problems binding my table to an array. I also found it difficult to delete data from the table and local storage at the same time. In the end i managed to get these working with minor errors in my code. I had no real problems with errors and glitches, everything works as intended in my final development of my application.

Peer reviews

Review 1: Drum It



Target group and requirements

From looking at the Drum it application, the target group would be musicians that need an application to generate drum beats for them. The target audience seems to be quite wide, since there doesn't seem to be a age rating attached. The application looks very broad in this sense. The application seems to be aimed at musicians exclusively, maybe focusing more on solo artists that need something to help them keep in time when playing an instrument.

Functionality

The application allows the user to create a beat track. The user can set a name, beats per minute, how many tracks the song has and the amount the song repeats(not a working function yet). Once the user has changed this, they can then create their beats. The user can drag and drop instruments onto the track, and play when the user presses the button. These features appear to be hard to implement, the way that i think the beats are done is, when an instrument is dragged onto the bar, it is assigned to a sound file. The track is inside a loop that will loop until all of the sound files have been played on the bar. Something that i found to be missing is the ability to delete beats that the user makes. This can be a problem for local storage as it can take up unnecessary space. Something else that i noticed was that you can not add an empty space in between instruments. This means that you can not have silence in a track.

User experience and Usability

The application is presented in an easy to use way. The application makes use of icons and clear text to illustrate what each button does.Having the ability to drag and drop instruments is very intuitive

as this is what users are to expect from such a function, as opposed to click and place. Having the ability to change the beat settings, before making the beat is a smart way of doing things. This makes usage simpler since all of these things are done first, as opposed to after development. The application has an autosave feature, this is an interesting feature because it ensures no data is lost but also it overwrites all data, meaning that if you change something by accident it can be impossible to recover.

Summary

Strengths:

- Clear and easy to use
- Simple
- Has a colour theme

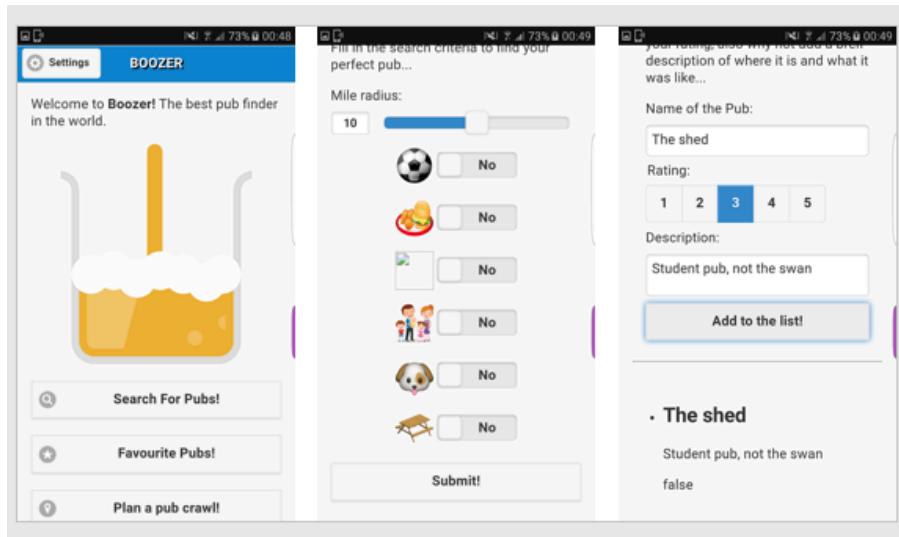
Weaknesses:

- Can not delete data
- Can not have silence in beats

Recommendations

I would recommend creating a way to delete beats first, just to make it better for users. Also making it possible to add an empty space in a beat. Maybe more instruments would be a good addition since 2 drums and a cymbal isn't enough. Changing the page name text to white with a black outline can improve readability.

Review 2: BOOZER



Target groups and requirements

From looking at the application i would say that it is aimed towards younger people around ages 18-21. The application is based around going on a pub crawl. Taking this into account i would say that students will play a large part of the target audience.

Functionality

The application has a few features based around pubs. The user can search for pubs, save favorites and plan out a pub crawl. When searching for a pub, the user can add extra search fields such as sport, food, live music(icon broken), family friendly, pets and outside seating. This is good to have although the application seems to go slightly off track. The application is based around students but there is an option for searching for family friendly. When the user adds a favourite pub, they can input a rating and a description then the pub is added to a list below. Something i thought was missing from this was saving the pubs to local storage.

User Experience and Usability

Overall the application is easy to use, with simple buttons and interactions. Something i found a problem with in the UI is the usage of icons to find a pub. In most cases icons would be better but I don't think they convey what they stand for well enough. Maybe instead of a number rating, swapping out for a star rating would be better again, this would help to convey what it stands for better than numbers. A problem with the ui is that the application does not fit to screen, its slightly too big. This could get annoying for users, since the application scrolls with certain interactions. Another problem with the Usability is the usage of a lot of text to explain what a function does. With mobile applications, the function should be self explanatory.

Summary

Strengths:

- Simple design
- Useful features
- Lots of options for searching

Weaknesses:

- Some of the layout is broken or not the best it could be
- Data isn't saved to localstorage
- Data cannot be deleted from the list

Recommendations

The next step with this application, i would recommend fixing the layout so that it doesn't scroll, and simplifying/removing some of the text. Some of the features don't work at current on phones, although they do work on web, this could be something that needs to be looked into since it takes away from some of the core functionality of the app.

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