COURSE NAME

A3: Rapid Design Sprint and Reflection

Introduction

This article discusses two parts of reflections regarding our team process, previous considerations and recent experiences processing our design Computing Project. Meanwhile, this also displays reflections deeply on our project and our teamwork.

Part 1

(what happened during my rapid design sprint...)

- ➢ **How did your team select the final theme/problem statement?**

Before starting this unit, I was always interested in dealing with the parking problem in the city area because sometimes I found it very difficult to find an appreciated parking place near a restaurant. In the context of this, I decide to use Brisbane parking meters and forecasting datasets to make forecasting for parking spaces and also use safety food permits to make sure customers will be able to parking and enjoy their meals.

Since we grouped sort of randomly, but fortunately, I had a choice to pick preferred members as my teammates, so I chose Joe and Yoto as my teammate. In this case, I still remember that we spent almost half an hour deciding which final topic or theme we would like to be the final project, and all agreed during our discussion. Regarding the score of Team Brief Preferences, the subject of “Emergency Response” has the highest score:7, and the Public space shows the lowest score:-2; the rest are Inner City Transport(4), Circular Economy (4) and Flora and Fauna (2). Therefore, we can see our group are not interested in Public space and Flora and Fauna, and then we looked at the rest of the topics ‘ ideas on Mirro. We asked each member’s ideas and matters then we looked through them on the Mirro board. Suddenly we found that the inner city transport topic caught our eye, as our team usually like travelling and has to go to campus by transport, and also we all had some feeling that this is hard to find parking places in Brisbane city. My rapid design topic is very similar to our team’s thinking. When our team looked through the Mirro board, we found my project idea with images showing a database connection and a Figma prototype on how three APIs connect, which looks like a basic app or website. Then I explained every detail about my idea

and how three datasets would join in the following weeks should look like in our project; after this, our teammates all agreed with my thoughts and topic.

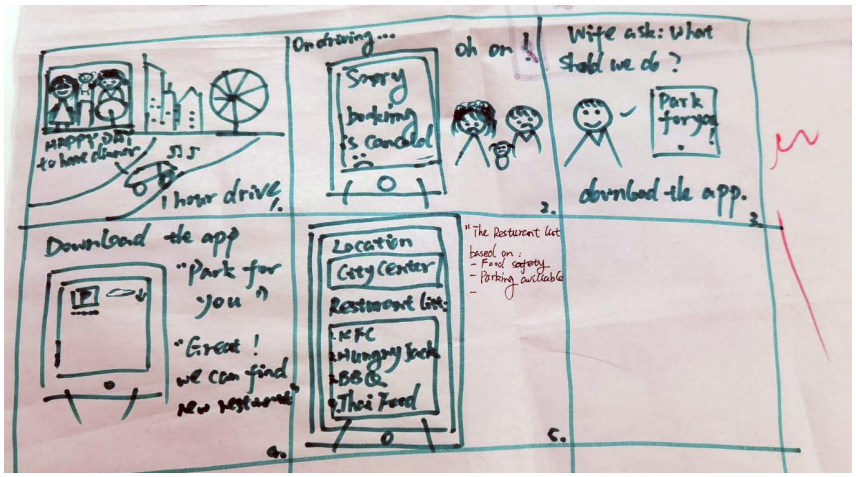


Image: The first draft storyboard created

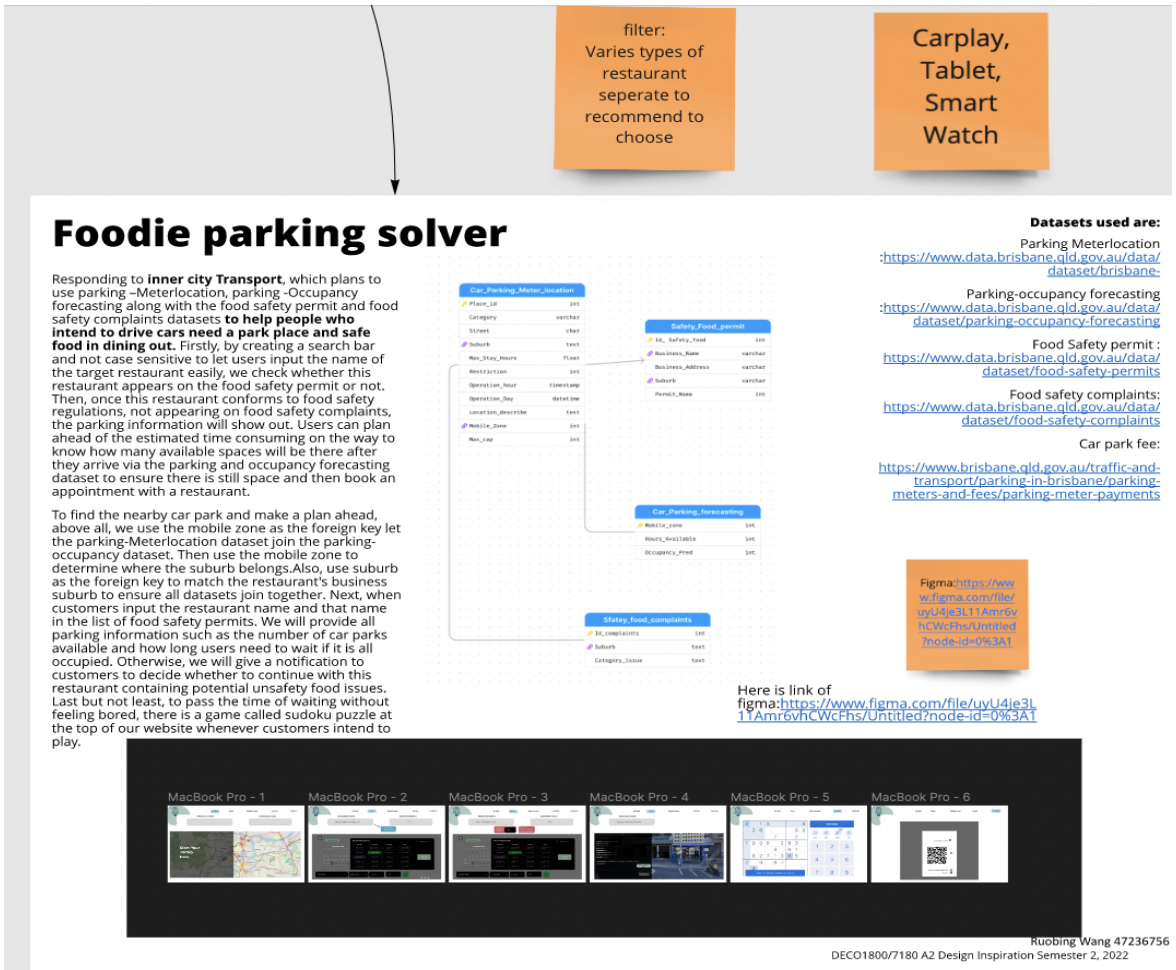


Image:original design inspiration on mirro board, contain Figma and data sets

➢ How did you explore the problem space and develop concepts?

Well, since all of our group members have an agreement with my idea and my general idea on this project, we still talked about how we could put our map and parking space in a reprobate way. We do discuss in the following sections:

1. The orders to show the map and restaurant .i.e is that the best way is to show the map first or the restaurant or both
2. What other activities could our project do to get more loyal customers?

Therefore we want potential customers could have benefited from our project or improve the current situation, such as hard-to-find car parking lots and healthy food at the same time. Therefore, we have discussed multiple times user-centred design parts. In addition, regarding making our app more attractive, I suggested adding small games like sudoku or car game in our project to kill time in users' waiting time; we also researched how recently those situations have become more serious.

➢ How did you contribute to early designs of the proof of concept (i.e. sketches, tech demo, etc.)?

As previously, I searched some datasets and realised how to connect them to make more sense for our project and consider our group member's skills. We aim to create a car parking application that finds parking places around the safety restaurant and search for restaurants' booking function.

To the proof that my concert was more reasonable and usable, I created the Figma to make a user test with my friends to get some feedback on how normal users reacted to this project. Meanwhile, our group members also summarised the paper user test feedback and critiques on the first stage of our project. After the paper user test, overall, our website concept that the

audience can understand well, but we found that the “Food Safety “ definition is not clear enough to let the audience understand.

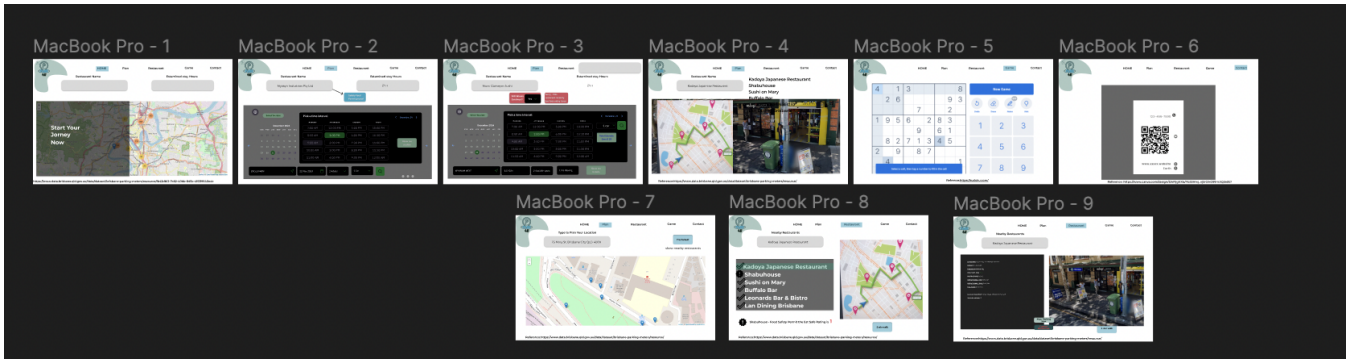


Image:the original stage of Figma

➢ How did you contribute to the final proof of concept?

As we are required to do some activity to attract potential users, I suggest providing a car game so that users could relax if there is too much they have to wait before parking. I did the research from three articles: L. J. Ratliff, C. Dowling, E. Mazumdar and B. Zhang, "To observe or not to observe: Queuing game framework for urban parking," 2016 IEEE 55th Conference on Decision and Control (CDC), 2016, pp. 5286-5291, doi: 10.1109/CDC.2016.7799079; Zhang, X., Li, P., & Li, D. (2014). CGPS: A Collaborative Game in Parking-Lot Search. Advances in Intelligent Systems and Computing, 250, 105–113. https://doi.org/10.1007/978-81-322-1695-7_13; Hilal, H. A., Hilal, N. A., Hilal, A. A., & Hilal, T. A. (2022). Crowdsensing Application on Coalition Game Using GPS and IoT Parking in Smart Cities. Procedia Computer Science, 201, 535–542. https://doi.org/10.1016/j.procs.2022.03.069 .

Those three articles proved that adding a game to an intelligent car parking web application usually makes more points on user experience. Moreover, our target user group is a young family with a car; we assumed that most young families have children, which means they may be more interested in games in such a long waiting time. To deal with the theme related to our project, car, I searched for an external resource as a game racing game is our activity. Next, we have another problem is the booking function; how to achieve it? I original thinking that we need to store it on our website as a data system; however, it seems much more time-consuming for this. Then I

suggest we may offer to check the available car parking places, which means when the user selects the date of dining out, then check the car parking available around this place, then go to the booking page. Then on the booking page, I recommended that you add into the user's storage like a screenshot or add it to google calendar.

➢ What issues did you encounter, and how did you resolve them?

The big problem we first meet is the live time data (real-time) on car parking available time, and we do not have real-time datasets when the user prefers to find out that the current parking spaces are unavailable. To deal with this problem, I suggested using forecasting datasets to show car parking. Nevertheless, we faced another problem: we aim to generate a booking function to let users lock this place. However, it also seems impossible to come true because of our lack of technical skills and APIs limitations. Then we have to adjust our project to save them as local storage instead of the cloud storage of the data.

Moreover, some feedback shows our game is unsuitable for our theme. Therefore, I did some research on how games on parking lot applications could get benefits to prove my idea. As more information should be on the restaurant, I added the address and changed the map icons to fit our projects.

```
var layers=[];
for(var i = 0;i< 20;i++){
    var layer = new L.marker([matches[i].LATITUDE, matches[i].LONGITUDE],
        {icon: retaurantIcon}).bindPopup("resturant name: "+ matches[i]["Business Name"]+
        " Eat Safe Rating:"+String(matches[i]["Eat Safe Rating"]+"Adress"+String(matches[i]["Whole Address"])));
    layers.push(layer);
}
```

Image1: VS code on add more information about restaurant

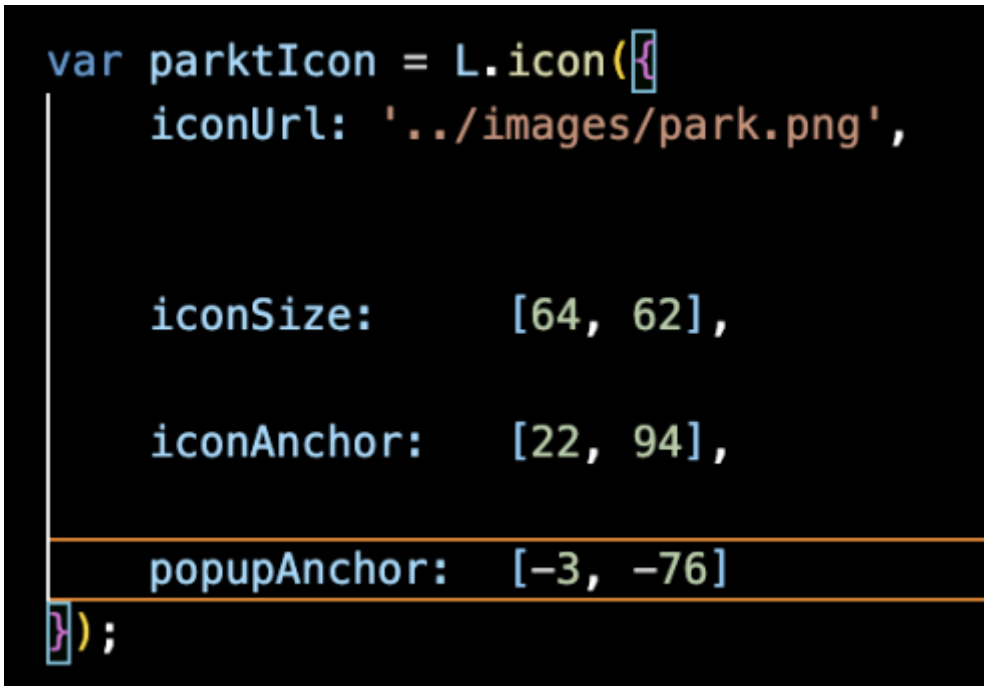


Image 2: change the icon of parking space

➢ What did you learn?

According to the feedback we accepted, I leant how the user test is essential in our project. As in the first-time prototype with the paper user test, we can understand how users' attitudes when they click the button and which layout is easy to implement so that we can adjust it later. Moreover, I have gained knowledge of user-centred design is fundamental. There was an instance of us doing the user test and discussing how to show the orders on the layout page. Is it the need to show that map first or the restaurant first? Even though we argued for such a long time and decided whether to establish the park information first or second. Thus, when we were doing the user prototype, most users stated that showing restaurant and park icons helped solve their queries.

On the other hand, concerning our group members from different backgrounds, we usually needed extra time to discuss the problems. Nevertheless, our group respected each other and helped us learn how designers communicate efficiently with the developer.

➢ What would you do differently in the future, given this experience?

In the future, there are so many things I would change different from this time. At the beginning of this project, I was thinking of making a unique and fun application that could help people find parking lots easily in Great Brisbane. However, there are a few technical limitations for me. Firstly, as a first-year student, I have to do more research to familiarise myself with the contents of this unit, and at the same time, I have to balance my other assessments with this one, which took me lots of time to do so. If there is any chance that I can change this situation, I would like to learn more knowledge on how to get APIs and js before starting this project.

Different...:

1. As my first Figma prototype that I made on Figma, it was not perfect enough and had no links between pages, making users confused when user tested the process. In the future prototype design, I will create a good Figma UX prototype and link them together as good implantation as accurate.
2. When I try to connect the datasets, I find it challenging to join them together, and the data have to clean; thus, in the future, I will continue to learn how to clean data on API in the PHP version.
3. During the beginning of the workshops, I learnt how important PHP is to storing considerable information. In future, I will continue learning how to use PHP to select data for the next few weeks.

Part 2

(Reflection considered on previous reflection and more recent experience in developing Design Computing Project. You need to reflect once again on the process that you and team undertook, and how this compared to the earlier rapid design sprint.)

- **How did you select the final theme / problem statement for the Design Computing Project?**

After repeatedly discussing our concepts, target user group, design MVP features, and API usage with my group, the idea and target user group we finalised did not change, which is the same as the previous phase.

While some technical issues happened, firstly, when we were required to connect the safety food permission list to the map, the data did not provide geographical position, only the actual Address (Bussines Address (Line 1)). Then our group member found another API that could free convert the address to a substantial number [image 3]. Similarly, we discovered that the Eate safe rate was insufficient in the next step. When we presented, some of the audience stated that senseless; therefore, we discussed that we would add an extra page to explain what eating safety rate means[image 4].

_id	Index	Busines…	Busines…	Business Address (Line 1)	Busines…	Business Address Suburb	Busines…	Eat Safe…	Permit …
1	1	Dolce A…	3/63 Sec…	3/63 Secam St		MANSFIELD	-	Rating N…	Food Ma.
2	2	The Klay…	Shop 5 /…	Shop 5 / 110 Macquarie Street		TENERIFFE	0734220…	Rating N…	Cafe/Re..
3	3	David's …	S64, 91 …	S64, 91 Queen Street (Myer Centre)		BRISBANE CITY	-	Rating N…	Cafe/Re..
4	4	Atula Pty…	81 Darra…	81 Darra Station Road		DARRA	-	5	Child Ca..
5	5	Mrs Luu's	40 Tank …	40 Tank Street		BRISBANE CITY	0481 21…	3	Takeawa.
6	6	The Jam…	Shop T2,…	Shop T2, 575 Logan Rd		GREENSLOPES	-	4	Cafe/Re..
7	7	Jacques …	Shop 2, …	Shop 2, 681 New Cleveland Rd		GUMDALE	-	Rating N…	Cafe/Re..
8	8	Chrissy'…	Mobile F…	Mobile Food Business		BRISBANE	0419923…	4	Mobile F..
9	9	Gelatissi…	Brisbane…	Brisbane Markets & Events		BRISBANE CITY	-	Rating N…	Food Stal
10	10	Vital Blend	S5, 219 …	S5, 219 Hawken Dve (The Greenhive Kitchen)		ST LUCIA	-	5	Food Ma.
11	11	Latin Ma…	56 Mollis…	56 Mollison Street		SOUTH BRISBANE	-	4	Cafe/Re..
12	12	15 Hope…	15 Hope…	15 Hope Street		SOUTH BRISBANE	-	4	Cafe/Re..
13	13	Friendly …	73 Mollo…	73 Molloy Road		CANNON HILL	-	3	Takeawa.
14	14	Nangam …	Shop 8, …	Shop 8, 158 Gowan Road		SUNNYBANK HILLS	-	Rating N…	Cafe/Re..
15	15	Woolwor…	25 Samu…	25 Samuel Street		CAMP HILL	-	Rating N…	Delicate..
16	16	Woolwor…	25 Samu…	25 Samuel Street		CAMP HILL	-	Rating N…	Bakery/

Image 1: screenshot from food safety permits shows that address data

Image 4: screenshot from the project demonstrates an explanation of the Eat rate meaning

❖ Was this the same or different to the rapid design sprint? If so why?

There are only small things different from the rapid design sprint, as most of the things we have researched well on data usage and functions required. Meanwhile, based on the first presentation on week 6, we showed our concept, target user group and processes we aimed to use, and most of the audience gave us positive feedback. The only few things we changed are providing more information for our concept, such as Safety Food permits, regarding some of the critiques we got after the presentation.

❖ How did you explore the problem space and develop concepts?

As per the feedback we received, I then companies with our leader to fix the theme and layout of our Figma. We used rates to illustrate this restaurant's rate to fix this problem. At the same time, in the previous stage, we struggled with how we could show our map contents, such as the map or restaurant which one offers the first, as most of the users answered show them at the same time would be more convenient. During the user test, I was charged with collecting how users' reactions, such as emotional reaction, time consumption and attitude. After this process, I created the document, wrote down the results, and recorded all users' behaviours. The next day, we held another meeting; I showed and displayed what I found on a google document and adjusted the Figma layout to let our other members understand who was charged with a more technical task.

Feedback: focus only on one function and test the restaurant first. Based on the restaurant location, find the parking place.

Summary from User Testing / Key insights:

1. Booking both is hard and not very intuitive. Quite small UI.
2. Just supporting information – no function to support the user flow
3. Add more engaging and creative
4. Average parking capacity
5. One search bar is enough
6. More explanation under the searching function – keyword
7. More information about restaurants
8. Home screen (3 restaurants & 4 parking)
9. List view is helpful but not necessary
10. Description must be clear

Image: the summary of the paper prototype after the process

Prototype file:

https://docs.google.com/presentation/d/e/2PACX-1vStjvoh9UnTzVKJwE2WRKV9iI_1t9a3f8LlTcMDAIFJgiD7cB2EsdhtgSnkh-XnDQ/pub?start=false&loop=false&delayms=3000

Videos user Test:

https://drive.google.com/file/d/1ZQeN_hJj5ZfFM3gVckXV0Ajw8LpR4D0t/view?usp=drivesdk

https://drive.google.com/file/d/1CBN0b0lCohGMpLBt7cAYRv3ybo0vBSCZ/view?usp=drivesdk

https://drive.google.com/file/d/1Dyum9rssIOnRH2rwjNXa-QfFV0FtQ6g4/view?usp=drivesdk

❖ How did you contribute to the project? Was this in the same capacity as the rapid design sprint?

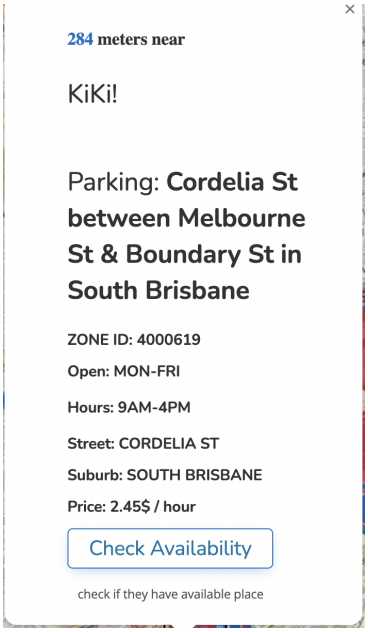
In the rest of the weeks before we finished our project. I was charged with general things. I was mainly focused on design like PPT design and summary report writing.

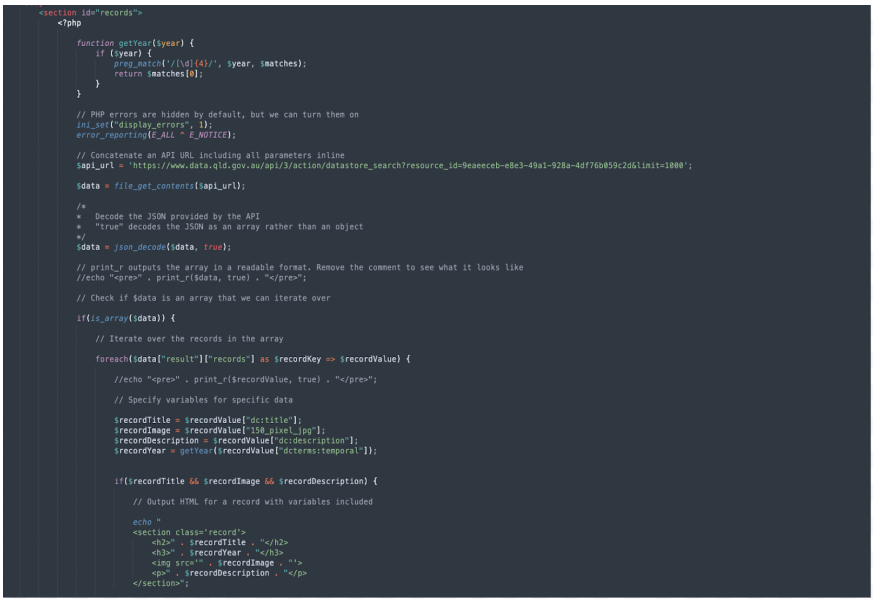
Meanwhile, I also help my group member if they have a problem understanding the design concepts of our projects or need translations.

Concerning my major in interaction design, I prefer to focus more on the design part. During this time, I helped our other group members on fixed coding problems, such as how to fix the js on the pop text and add some more information when the user clicks the park or restaurant icon[image 5]. I also suggested providing a distance of parking places to the nearest restaurants to help users find the most convenient parking spot. Furthermore, as I compared most applications with the map, they usually have a function to show users' location[images 7; image 8]; thus, I suggest that our group add this function to help users if they prefer to choose restaurants regarding their location.

In week12, I also created a ppt for a trade show to display our overall project.

PPT: 20 October 2022





```
<section id="records">
    <?php

        function getYear($year) {
            if ($year) {
                preg_match('/[\d]{4}/', $year, $matches);
                return $matches[0];
            }
        }

        // PHP errors are hidden by default, but we can turn them on
        ini_set("display_errors", 1);
        error_reporting(E_ALL ^ E_NOTICE);

        // Concatenate an API URL including all parameters inline
        $api_url = 'https://www.data.qld.gov.au/api/3/action/datastore_search?resource_id=9eaeeceb-e8e3-49a1-928a-4df76b059c2d&limit=1000';

        $data = file_get_contents($api_url);

        /*
        *   Decode the JSON provided by the API
        *   "true" decodes the JSON as an array rather than an object
        */
        $data = json_decode($data, true);

        // print_r outputs the array in a readable format. Remove the comment to see what it looks like
        //echo "<pre>" . print_r($data, true) . "</pre>";

        // Check if $data is an array that we can iterate over

        if(is_array($data)) {

            // Iterate over the records in the array

            foreach($data["result"]["records"] as $recordKey => $recordValue) {

                //echo "<pre>" . print_r($recordValue, true) . "</pre>";

                // Specify variables for specific data

                $recordTitle = $recordValue["dc:title"];
                $recordImage = $recordValue["150_pixel_jpg"];
                $recordDescription = $recordValue["dc:description"];
                $recordYear = getYear($recordValue["dcterms:temporal"]);


                if($recordTitle && $recordImage && $recordDescription) {

                    // Output HTML for a record with variables included

                    echo "
                    <section class='record'>
                        <h2>" . $recordTitle . "</h2>
                        <h3>" . $recordYear . "</h3>
                        <img src='" . $recordImage . "'>
                        <p>" . $recordDescription . "</p>
                    </section>";
```

Image 5: the poptext information shows when user clicks icon on map

Image 6: codes for poptext section

❖ What issues did you encounter and how did you resolve them? Did the rapid design sprint influence the issue or resolution?

I think the design sprint is a resolution because I first thought about those datasets. I did not recognise we could use it to prove how restaurant safety is. I kind of like I did not consider more about how they can be more creative or other entitle of restaurants we can use, such as the Safety Eating rate.

The first problem I encountered was how to show the calendar on the page and let the user pick a date, and it takes me a long time to search for some resources on HTML, CSS and js. Firstly, I found there was an online source, but we had to pay; then, I tried another research and finally found another option that did not require any payment. Secondly, after the first presentation, some of the audience tell us we should add more photos of the restaurant, then we do consider Yelp may be a good option. However, it requires us to send emails and pay for the resource content, and because of that, we decide not to use photos of the restaurants; instead, we choice provide some phone numbers. Last but not least is time crush; this is because we are all master's

students, we are all almost busy all the time, and sometimes it is hard to make a team meeting, so I create an online meeting picker," When2meet" in my team so that we can know which time is suitable for each other.

❖ What did you learn from the rapid design sprint in comparison to the more extended Design Computing Project?

For personal speaking, I think the rapid design sprint is more like a group of people brainstorming ideas and how to make our project looks better without the technology involved. However, for the more extended design computing project, we must consider more user experience, time consumption, and how we could achieve so far based on our skills and remaining timely. Moreover, the more extended design computing project is more about group collaboration. At the same, we can get to know each other and how they think about ideas and group communication.

I am an active student who usually enjoys group projects and being a speaker between designers and developers. For instance, sometimes there is a misunderstanding between the designer and developer in my team, as we have various backgrounds and language differences, such as confusion about the design proposal or the coding structure. It's often like this, and I will stand in their situation to think about the problems, like how I can let other team members know their thoughts, why they are feeling this way, and what issues we are facing that we could come together to fix.

❖ What would you do different in the future given both of these experiences?

During these twelve weeks of study, I understood a bit about the design industry. In the previous, I thought that design was art or a sign, not a relastic; however, after study in this subject, I understand a good designer should understand the real issue at the first stage so that that designer can make innovations in future. On the other hand, I also learned how essential users' experiences are, as we did many user tests, and the users are always the main targets. Thus, in my future design journey, I will focus more on the potential customers, observing their activities and attempting to comprehend their queries, motivations and interests.

Furthermore, as we did the research only in Brisbane, they may be different performances if we intend to promote our project in other states. For the following study, I should more carefully adjust the focus of the user's observations to fits current markets.

I realised we did not prepare very well for the user prototype from the previous user test feedback. Hence, in the future innovation project, I will improve the future user prototype processes according to the input.

Last but not least is time management; I feel a little bit rushed during this period. In the future, I will create my to-do list and balance my other subjects.