Project Title – Meal Time

★Topic

- The topic is centred around creating a tool to help/assist users in creating meals by entering ingredients in which they already obtain in their household. By entering the key ingredients the user will receive an output detailing a selection of recipes obtaining the key ingredients imputed.

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We here declare that the project material, which we now submit, is our own work. Any assistance received by way of borrowing from the work of others has been cited and acknowledged within the work. We make this declaration in the knowledge that a breach of the rules pertaining to project submission will carry serious consequences.

1. Background

1.1 Technical Research;

We conducted research into various popular meals and the aesthetic design and implementation of current web applications such as[1] BBC Good Food . BBC Good Food is a great example of a web application which addresses key technical components that provide users with the functional and technical tools to find and search for a recipe. Some of those key technical aspects we discovered included;

- A user can add a recipe to the database
- Searching for a specific recipe
- Additional links to resources
- Navigation bar
- Responsive web design

The above components were derived from viewing the functionality and technical features within web applications like BBC Good Food.
As there are many web applications for recipes, this led us to the question:

“How can we improve or create something somewhat different?”

1.2 Design Research;

Further research revealed one important aspect that wasn't met within many websites, which was a **simplistic web application that did not involve information overload** to the user. We found that excess information can detract a user from making a decision or completing a task. With this in mind, we decided to tackle an important challenge which can be found in a large amount of recipe web applications. For instance, many videos that bring the user away from the web application and into a link to another site, links to social media platforms, user comment sections that can distract and allow the user to completely miss the key information and importantly the purpose of the web application in of itself.

Consequently our initial analysis allowed us to construct a design and build a web application centred around the key technical components and

[1] "BBC Good Food." https://www.bbcgoodfood.com/. Accessed 24 Mar. 2022.

their functionality while addressing a simplistic, cohesive design comprising the integrale aspects of the application.

2. Motivation

2.1 Reasoning;

The reasoning for choosing a web application centred around the concept of meal preparation and cooking. This is a universal topic with which every person can relate. All members of the group project come from different backgrounds, different lifestyles, different cooking styles. However, all share a common passion about what “Meal Time” means to them and how this is incorporated into each person's daily life. Hence, the creation of easy, quick and delicious meals became the motivation and drive for the project.

Based on our analysis, we aim to rely on simple design principles in order to be able to cut down on huge amounts of what would inevitably be superfluous and repetitive text. All elements of the web application - from layout, to design, to structure, to navigation tools - aim to focus on simplicity, accessibility, ease of use, and attractive, recognizable aesthetics. This was a motivation from the onset of the project as this was a design concept that appealed to us.

3. System Overview

Figure 1. System technical diagram

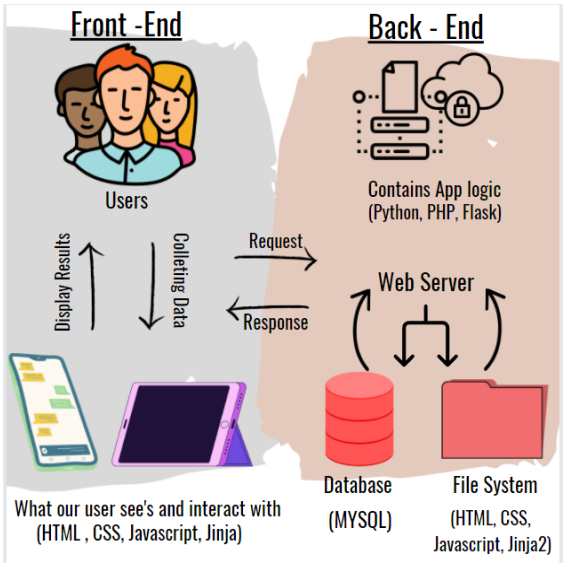


Table 1: Component description

The system comprises front end programming languages with back end technical programming language and database to ensure components carry out functions to be carried out by user. Research was carried out to further understand the layering of a web application

Component Name (Back-end)	**Description**
App Logic	The application functions are contained within Flask & Python.
Database	All the required data is saved in a table on MySQL workbench with specific schema.
Web server	Make a connection between database and file system for development.
(Front-end)	**Description**
User	On the front end users can see the results of all the codes and tools. Users add their personal data while registration and login to the app.
User Interface	The User Interface consists of the HTML, CSS, Jinja and Atom. These elements combined created a visually appealing web application design.

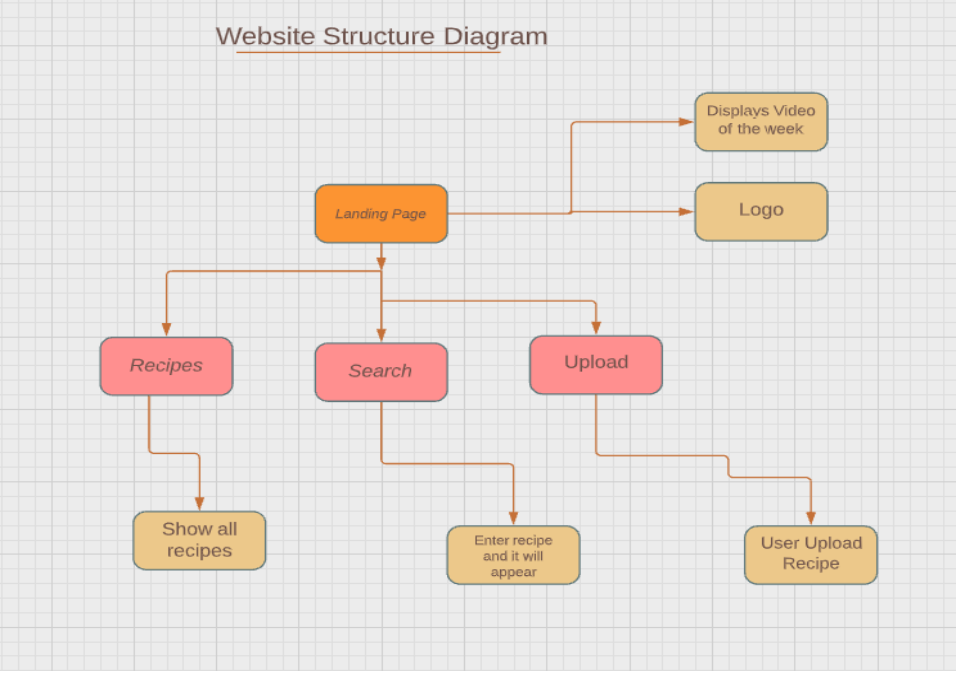
4. Design

4.1 Web application structure;

The the order of the pages of the web application is designed in a conscious way, such that our **'Recipes'** page all recipes that are within the database, this is then followed by the **'Search'** page, which gives the user

all the tools they may need or want to use to find a recipe with specific ingredients in mind, next is the **'Upload"** page which is useful for pointing the user to add there own recipe to the database in addition referencing to social media platforms to encouraged conversation and interaction with 'Meal Time' users.

Figure 2: Web Application Structure;



4.2 Key design features;

Key design features that were considered and we wished to be mindful of and consistent across the building, implementation and functionality of the web application were the following;

- Colour - As the web application is centred around the concept of meals. A simple organic colour was implemented and an aesthetically pleasing background colour was integrated as the focal point in design. The reasoning was to emphasise the clear purpose of the site subconsciously to the user, i.e the web application being created for meals. The concept of a crisp, clean and simple design

with one key contrasting organic colour against a crisp white background.

- Consistency -The design was created to have a consistent logo across all pages and in addition a simple palette that is demonstrated on each page. As the user is receiving new information and concentrating on the task at hand i.e searching for a recipe. The user eye is attracted to small simple design features rather than an overload of information which may detract from the key information of the recipe.

- Personalised - From the beginning the intention of having organic personale images from members of their own recipes creates a sense of meals that can be realistically created and not a photoshopped image or in a professional kitchen with photographers that many food images in today's society are viewed online. Also we wished for the user to be able to upload their recipe to the web application further providing a personalised experience and truly something for the user to interact with and integrate into their daily meal time routine.

4.3 Usability;

We tried to make the web application functionally simple for users to navigate. The user interface displays a navigation bar on all pages for the user to seamlessly manoeuvre throughout the pages. This gives the user the experience of whether to add their own recipe or search, this was a conscious decision in order to give the user further freedom and control of dedicating their own personal decision and decision of moving through the web application.

Attached is a link to User Manual Guide;

https://www.canva.com/design/DAE7tDCABjc/GuWw-CZ7WMYqygaFNYeb4Q/view?utm_content=DAE7tDCABjc&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

The user manual provides an overview and assistance guide, this was implemented to give the user some key information and tools to provide a further understanding of the web application.

5. Testing

5.1 Design Testing;

We designed and tested a simple logo.The reasoning for testing and designing multiple colours for design logo was to make sure that all pages are instantly recognisable as being part of the web application. This reverts back to our original concept of cohesive design elements and consistent branding across all pages.

Figure 3: Logo Design

5.2 Database Testing;

An integral part of the implementation of the web application was team members' access to one single database so each member can assist with the accumulation of data information. Learning how to export data from MySQL and another team member being able to import such data was a technical test carried out.

The below link provides a live demonstration of importing and exporting of the database used in the development of the web application. This aspect of importing and exporting the data was an essential part of implementing the data for all members to access.

Link to MySQL export and import testing;

https://files.fm/u/v9429y9nh

Video Walkthrough testing;

https://vimeo.com/691559512/bc09d606a6

5.3 Technical difficulties;

Several technical difficulties arose when constructing the web application such as we were able to code a nav bar that looked and functioned as we had planned for, but we were not able to embed the logo of the website in it as we had initially hoped. After consulting with potential users during the build of the web application we found that the visual aspect of the nav bar (how it changes colour when you hover over different parts etc.) worked well for the user and the positioning of the logo above the navigation bar sufficed.

Another difficulty that we encountered and overall became the most challenging was the search engine. This was something that was researched and tested extensively however we kept encountering multiple problems. We researched many different Python if statements or loops however none of these codes resulted in the correct outcome. From receiving assistance from the lecturer we could then understand the errors

we had encountered. As a result **Hyowon Lee** provided us with understanding what is the correct code and we could then apply a web application to run the search function correctly and without error.

Furthermore we also had difficulties with exporting our database to other team members with the assistance from **Aditya Vadagave** who was a previous lecturer who taught Mysql provided the understanding of how to export the database in order for all members to be able to use the same database. This was a challenge we could not resolve simply by searching online or also attempting several methods we researched independently. However this challenge was overcome and resolved which resulted in the database being exported successfully.

5. 4 Usability Testing Link Below;

Results from Survey;

The usability testing allowed for feedback on providing additional resources to assist the user. For future improvements this could possibly integrate as links to tips and tricks on cooking, for **e.g** how long should you normally cook pasta? How to set the dinner table for guests? The feedback allowed also for some positive feedback on key areas that we designed to insure ease of use, all participants felt no additional support was needed when navigating through the web application. This feedback reverts back to the original concept of the web application being designed for simple and non overwhelming implementation in design and build.

6.Summary

The initial web application and overall goal was centred around creating a tool to assist users in creating meals by entering ingredients in which they already obtain in their household. By entering the key ingredients the user will receive an output detailing a selection of recipes obtaining the key ingredients imputed.

Throughout the design and development we faced challenges such as the functionality of the search engine. We can appreciate it being functional however our ability to produce exactly what was desired we recognise

could have future improvements. Such as, having a “oops recipe not found”, or personal profile for users to see past activity of uploading recipes or recipes used in the past.

Overall learning from exercises, classes , additional courses online , youtube tutorials and from the assistance of Lecturers has allowed us to learn key fundamentals of front end and back end web development. Understanding of exactly why and how a web application is compiled together was something no members had undertaken before. Learning exactly how to create a database, creating an app route and using flask python to connect to HTML, CSS and Jinja was a huge learning experience and has provided all members with confidence and knowledge to apply to future projects.

7. Appendix

7.1 References;

We gained some knowledge from these websites to create our web application.

- https://www.usability.gov/how-to-and-tools/methods/usability-testing.html
- https://mediatemple.net/community/products/dv/204403864/export-and-import-mysql-databases
- https://www.softwaretestinghelp.com/web-application-testing/

7.2 Work Log;

Date	Details	Time
27/02/22	Began creating the final report, discussed layout. Discussed everyone's roles going forward for final project and implementation.	30mins
01/03/22	Meeting with our supervisor Brian Davis to look at current code and what improvements can be made, we worked on creating a landing page.	30mins
02/03/22	Had a meeting with group members, to discuss the UI design and colour scheme for the app.	40mins
03/03/22	Created a website structure diagram for the final report to assist in explaining website structure.	30mins
05/03/22	We adjusted CSS and HTML of web application to reflect more towards our initial design from the original report.	1hr
08/03/22	Created a revert back button for if a user upload a recipe it brings them back to the landing page something which was new and challenging but we successfully completed. Discuss our progress with Brian Davis and he explained some important points for the app.	1hr
12/03/22	Discussed technical issues we were facing with the search and upload section. We resolved the upload section but were still struggling to find any solution online via stack overflow, youtube, datacamp etc. to resolve the search function not working correctly. All members spent a considerable amount of time testing code that was not working.	3hrs
13/03/22	Added to the final report the contents for the Research, Motivation and Design sections.	2hrs
14/02/22	Continued developing the database to have further recipes for users to interact with. Anytime we were making a dish we took photos in order to use as many of our own personal images as possible.	2hrs 20mins

14/03/22	Discussed with Hyowon Lee technical issues we were having with the database.	50mins
15/03/22	Discussed with Hyowon Lee the code he emailed to apply to python code the previous day and demonstrated to Mr.lee successful technical testing. Had a meeting with Brian Davis, to discuss the status of the project. Advice on what actions to take and code that could be improved or adjusted.	25mins/ 30 mins
16/03/22	Added to report our technical testing, summary, System overview and work log to date.	2hr 30mins
17/03/22	Created final powerpoint presentation amongst one another via zoom. Also created a script to assist in discussion. Wrote answers to general questions that may be asked.	1hr 40mins
18/03/22	Created small videos on technical and user testing for final report.	1hr
19/03/22	Began usability testing with users within Davor workplace. Converted finding of user survey into bar chart for final report to show findings from survey.	2hr
20/03/22	Implemented responsive web design using bootstrap and positioning of logo. Also discussed colour scheme. Discussed implementing different colours.	1hr
21/03/22	Brian advised on the final report and how to improve applied corrections accordingly.	1hr 30 mins
22/03/22	Meet with Brian Davis for the final time to address any technical feedback that could possibly be improved and overall small details to design.	50mins
23/03/22	Created manual guide for users on zoom together. We agreed we wanted some short presentation style guide and a non traditional guide as such.	45mins

23/03/22	Received assistance from Aditya Vadagave via zoom on exporting database so all members could access the complete database file.	30mins
23/02/22	Completed Video walkthrough together and did trial runs of our presentation. Finished any small details and revised our work before submission.	2hrs 30mins
24/02/22	Submitted Final Group Report	