

Meal Planning - Design Development Write-Up

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1. Introduction

Our design of a functional prototype for Meal Planning included deliverables from our stakeholders, the students, out in the world personnel and other users. In our Needs Analysis, we created two types of designs for our prototype. The final product was a combination of both designs as we could confirm that the deliverables were split evenly between the two. The main functional requirements for the development of the Meal Planning Prototype include;

A. Calendar	Allows for viewing of daily, weekly, and monthly.
B. Recipes	Browsing recipes by meal category
C. Filtering	Specific requirements for allergies, time to cook, etc.
D. Meal Types	Specific Meals based on type
E. Budget	Browse items based on budget type
F. User Login	Specific to each user based on login

To acquire these functional requirements our team created a paper prototype and a list of tasks for the user to perform. After observations and analysis, we then made the necessary adjustments to the Meal Planning prototype “My Meal Maker”, to work properly.

2. Prototype Documentation

Figure 1.1, the create account/login, is the first screen our app opens up to. The user types their username and password in their respective boxes and after a button with an arrow appears in the bottom box for the user to press and enter the app.

The Menu screen, *Figure 1.3*, appears after logging into the user's account. Here the user can choose where they want to go. Originally, the screen that appeared first was *Figure 1.2*, which shows the daily calendar view with the meals for that day along with a button to "Create a Meal Plan". The top left button would then take the user to the Menu screen.

The "Meal Plan Calendar" button from the Menu screen opens to the Monthly calendar view, *Figure 1.4*. This screen was added after we began testing to give the user a bigger picture of meals they planned during the month.

The weekly calendar view, *Figure 2.3*, was changed from *Figure 2.2*, where that screen has multiple buttons for each day that takes the user to the specified recipe type. For example, the plus button on dinner would take the user to dinner recipes. The new weekly calendar view simplifies this by having just one button to add meals that takes the user to a recipe type selection.

The daily calendar view, *Figure 2.4*, displays the meals for that day, otherwise it will display "No Upcoming Meals". The top left button takes the user back to the Menu screen and the top right buttons go to the other calendar views.

When the user presses any "Add meal" or "Add Meal to Calendar" button, they are taken to the Recipe Type screen, *Figure 3.1*. Here the user chooses which type of meal they are looking for. For example, the "Breakfast" button takes them to a list of breakfast recipes.

The Breakfast screen, *Figure 3.2*, displays breakfast recipes. The top right button takes the user to the Filters screen, *Figure 3.7*. Once the user presses a recipe, they are taken to that specific recipe screen, such as "Blueberry Pancakes" as pictured in *Figure 3.5*. The same thing happens from the Lunch screen, *Figure 3.3*, to the Vietnamese Pho Recipe Screen, *Figure 3.4*.

In the recipe screens, there are buttons to add ingredients to a grocery list, change the serving size, close the recipe screen, and add said recipe to the user's calendar.

When the Filters screen is used, the recipes change order as shown in *Figure 3.6*. Also, a number will appear on the filter button, in the top right corner, indicating the number of filters used.

3. Usability Test Plan

Our team had 4 testers: a greeter (puts the users at ease), a facilitator (gives instructions), a computer (controls the different screen navigation) and an observer (observes the testing process and takes notes).

In the first phase, we selected 5 test participants who were students in our class to get some general feedback. After that, we made changes to the prototype and tested it with other people from different age groups.

Each participant was given the following tasks to complete in the testing of the prototype:

1. Create an account
2. Add Blueberry Pancakes to your Meal Planner for the 25th of March
3. Add Vietnamese Pho for Lunch from the Calendar page for the 25th of March

4. Filter Lunch recipes by an hour.

During the testing, we used objective and neutral language to encourage the users to figure out tasks on their own. We also wanted to keep the instructions descriptive to know whether the users are intuitively navigating through the interface.

4. Usability Test Report

While conducting our meal planning paper product tests, our group noticed aspects from our app that confused our users. There were instances where the user wanted to explore features of our app that were not included into our paper product, such as viewing the recipe for a meal. We also noticed that our users searched for icons that allowed them to exit the page which were not present at the time. There were some options in our app that performed the same task, which confused our users. Additionally, some users selected the incorrect icon but understood the task they wanted to accomplish, such as choosing the recipe button instead of the calendar button, and selecting the time button instead of scrolling left to right. Many of our users reported that they enjoyed the paper product test and some of the features our app included. We have taken user feedback into consideration and adjusted our app accordingly, which will be further elaborated on in our Conclusion.

5. Conclusion: Lessoned Learned

When designing our app the team took on roles and each designed a screen, or multiple screens, of the paper prototype. We all had different ideas for implementation and while many of the ideas worked, others did not. Many of the screens forgot to include either a “back” button or “x” button to be able to get out of the current screen. There were multiple modifications that were made to our original design, however, most of them were minor.

In the beginning, we didn’t have the option to view the calendar in a specific range, it was either weekly or daily, this was changed during the testing of the prototype so that the user could choose their desired view. In our calendar we previously had the option to add “breakfast, lunch, dinner”, but we removed this option as it wasn’t needed in our calendar and also it was missing other meals that we have in our menu options such as “appetizer, dessert”. During the modification we implemented the option to click on the date, or click on the button at the bottom of the screen to “add meal” then after that it takes the user to a screen where they could choose their meal type. During one of our prototype testing sessions, the user would click on the “+” next to the ingredients which allows you to add specific ingredients to a grocery list in the event that you want to cook the recipe but already have some of the ingredients at home. This was not

an error per say, but it was an error in design, because the task was to “add the recipe” to the calendar. To fix this issue we added a button at the bottom of the recipe that states “add to plan”. This leads us to another confusion. During our testing, our home screen had a few corrections. We removed the list of “suggested meals” from the page, and replaced it with a button that will navigate to the suggested meals page. This looks less crowded and the next user no longer clicked on one of the individual suggested meals when trying to add a breakfast item during the tasks. We also changed the wording of “create meal plan” to “add meal” or “add meal to calendar”, depending on the screen, as it was more precise and this change avoided confusion on the tests that followed. When it comes to sorting the meals by cook time, the users were confused, with only two users actually scrolling from left to right without being prompted to do so. This might be a change that could be made to the app in the future, or perhaps we could make it clearer to the user that it is a scrolling from left to right option. Another observation that was noticed was that the older generation didn’t know how to use the triple-bar button right away. Perhaps adding a title over the triple bar named “Menu” would help the older generation with ease of navigation.

In our final design our team will work on achieving uniformity throughout the app. As of now, there are some icons that perform the same task, but are at different locations on different screens, such as the “x” button. One of the most difficult tasks when designing this prototype was assuming that all users know how to use all features on an application, and during the testing we learned that this was not the case. This leads to another change in design that will also include more titles where necessary in the event that the user is not tech savvy, as we can not assume that all users know what task a triple-bar icon performs. Overall, the design wasn’t modified in a way that the app now looks entirely different, but it was modified in a way that is more user friendly.

6. Appendix

WELCOME TO

MY MEAL MAKER!

username:

password:

Make My Meals: ☐

Figure 1.1

March 25th, 2023

No Upcoming Meal

+ Create a Meal Plan

Figure 1.2

Menu

Meal Plan Calendar

Grocery List

Recommendations

Figure 1.3

Monthly

March 2023

SUN	MON	TUE	WED	THUR	FRI	SAT
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
29	30	31				

+ Add meal to Calendar

Figure 2.1

MY CALENDAR

MAR. 2023

Week of March 20th

SUN	MON	TUES	WED	THUR	FRI	SAT
BREAKFAST	Breakfast	Breakfast	Break	Break	Break	Break
LUNCH	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
DINNER	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner
Desserts	Desserts	Desserts	Desserts	Desserts	Desserts	Desserts
Snacks	Snacks	Snacks	Snacks	Snacks	Snacks	Snacks

+ Add meal to Calendar

Figure 2.2

Weekly

Week of March 20th

SUN	MON	TUES	WED	THUR	FRI	SAT
20	21	22	23	24	25	26

+ Add meal to Calendar

Figure 2.3



Figure 2.4

PLEASE SELECT
MEAL TYPE:

BREAKFAST
LUNCH
DINNER
DESSERT
SNACKS

Figure 3.1

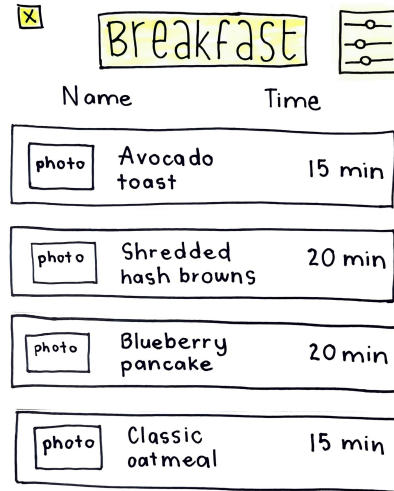


Figure 3.2

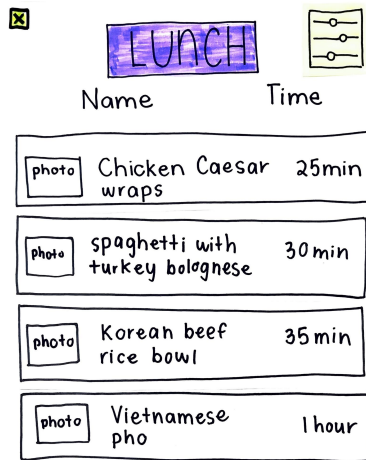


Figure 3.3



Figure 3.4

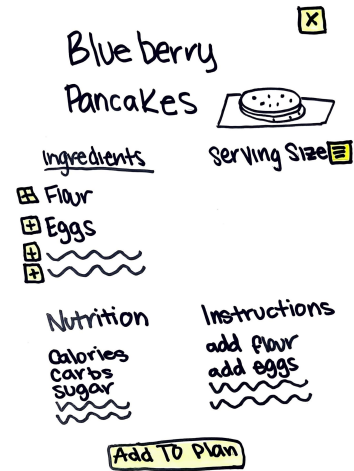


Figure 3.5

Figure 3.6

Figure 3.7