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PLAN YOUR PLATE
A MEAL PLANNER APP

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Contents

1.0 OUR ASSIGNMENT.....	3
1.1 Usage scenarios	3
2.0 CONTRIBUTIONS.....	4
2.1 Each members contributions	5
2.2 Gannt-Diagram showing the process.....	5
2.3 Project planning.....	5
3.0 DESIGN.....	6
3.1 Color scheme.....	7
3.2 Layout.....	8
4.0 IMPLEMENTATION	9
4.1 Calendar	10
4.2 Google Maps	10
5.0 TESTING AND ITERATION.....	11
6.0 OVERALL CONCLUSION.....	12
7.0 RECOURSES	13

1.0 Our assignment

Our assignment is to make a meal planner app that allows the user to stay organized and plan their meals in advance. The tool helps the users to generate a suitable meal plan based on their diet as well as ensuring users that they have all necessary ingredients for the week, and in that way, save money. The assignment also includes Google Maps so that the user can locate the nearest grocery stores, and Google Calendar to show their upcoming meals which the user can set alerts for, to be reminded of what to make and when to make it.

The app gives the user a suggestion of meals they can prepare during the week, based on diets, and the user can easily regenerate the suggestions if they want to choose something else. When the user is happy with their choice of meals, the ingredients are added to their shopping list, where they can delete ingredients they already own. The user can choose to add the meals to their Google Calendar and set alerts to be reminded to go shopping. The Calendar also gives the user the possibility of adding the same meal on multiple days, and more than one meal per day. This gives the user the opportunity to tailor their meal plan to their needs, and this provides a great user-experience. The interface also provides the user with nutritional facts about their upcoming meals so that they easily can choose healthier meals and meet their goals.

The tool will be a great relief for anyone that wants to save money, time and energy on meal preparations and grocery shopping. Overall, this tool provides an organized and healthy relationship to food.

1.1 Usage scenarios

We worked with three usage scenarios with three distinct types of users. Each one of whom could possibly interact with our website. This enabled a possibility to capture a range of users and their specific goals and needs. This approach allowed us to develop a design that efficiently addresses the diverse requirements of our future users.

1. A busy working professional wants to start eating healthier and save time and money by planning meals in advance. They use the meal planner app to schedule their meals for the week on their Google Calendar and to specify the ingredients they need for

each meal in the shopping list. The shopping list is generated for the user and uses the built in Google Maps to show them nearby grocery stores and farmers' markets where they can purchase the ingredients. With the app's help, the busy working professional are able to plan their shopping trips efficiently and ensure that they have all the necessary ingredients on hand to prepare healthy meals throughout the week.

2. A family with young children wants to make meal planning and grocery shopping less stressful and more efficient. They use the meal planning app to schedule their meals for the week on their Google Calendar and generate a shopping list through the app. They use Maps to locate nearby grocery stores and farmers' markets and plan the shopping trips accordingly. With the app's help, the family can save time and reduce stress by avoiding last minute trips to the grocery store and ensuring that they have all the ingredients they need on hand to prepare healthy meals for their family.
3. A college student wants to eat healthier and save money by cooking meals at home. They use the meal planning app to schedule their meals for the week on their Calendar and the app generates a shopping list for them. They use the built in Maps to find nearby grocery stores and farmers' markets where they can purchase the ingredients. With the app's help, the college student can save money on groceries and prepare healthy meals at home instead of relying on fast food or other unhealthy options. The app's nutritional information also helps them make healthy choices and stay on track with their dietary goals.

2.0 Contributions

Naturally, each student has different skills to contribute to the project. Our plan was to work on the parts of the assignment we felt most passionate about until we had a clear sense of direction. Once we reached that point, we would collaborate more closely, assigning tasks to one another so that everyone had a chance to contribute to every aspect of the project. This method worked well to start all the processes as early as possible and give more time to the work instead of discussing every decision of our assignment. Nevertheless, every member had the possibility to question other members work at all times in the process, this way everyone was included in every task from the start through good communication.

2.1 Each members contributions

Eirik: Google Maps/Calendar API, HTML, CSS, JavaScript, Figma and report-writing

Isak: Google API Maps, HTML, CSS, JavaScript and report-writing

Pernille: HTML, CSS, report-writing and Figma design

Stine: HTML, CSS, report-writing and Figma design

2.2 Gantt-Diagram showing the process.

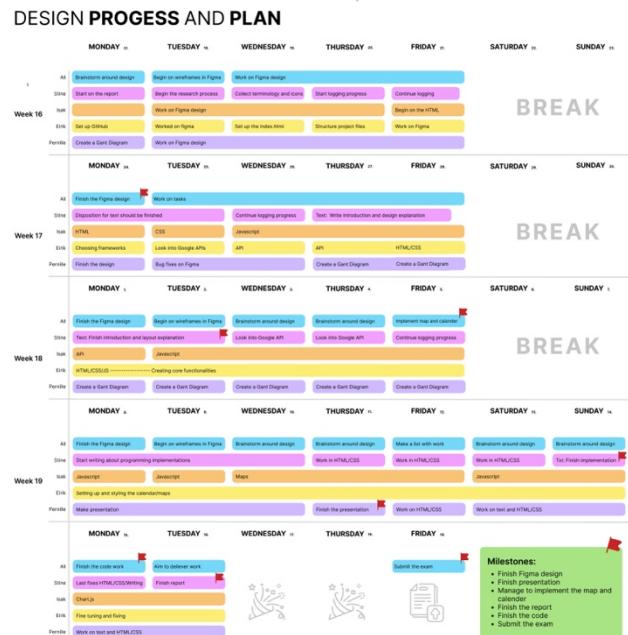


Image 1: Our Gantt Diagram

2.3 Project planning

As mentioned previously we were very clear on each members tasks in the assignment early on. We decided to make a Gantt diagram to give ourselves deadlines for every milestone of our assignment, such as when the Figma design should be finished, when to start writing the

text and most importantly, when to have the different parts of the programming implementations finished. Although it is easy to make a diagram in advance, is it difficult to say for sure how much time is needed for each task, especially when it comes to programming. That is why we decided that everyone should have access to the Gannt diagram via Figma and update it whenever something took more or less time than expected. Therefore, we approached this project with flexibility to adapt if necessary.

Throughout the project timeline we communicated efficiently and worked together as well as separately. We all updated each member on what we have done regularly and provided each other with support to keep up with the short amount of time given for this project. Stine also wrote a summary for each session we worked on the project, to keep track of what had been done and what needed to be done as well as to help ourselves in the writing of the report. The clear deadlines in the Gannt diagram also made it easy for everyone to know when another member should be finished with their parts, so that another member could take over. This created a smooth transition between the members and the tasks which was crucial part of making our meal planner app in addition to give the members access to every part of the project.

Overall, the project planning of our meal planner app was essential for setting clear expectations and made it easy for all members to collaborate efficiently. The Gannt diagram was a tool that was practical to remain flexible and provide open and clear communication within the group.

3.0 Design

In the design we all contributed with different parts of our process in mind. Pernille focused on the design from a user's perspective and what would be aesthetically pleasing for the user. Stine helped with the design from a research perspective with a main focus on implementing common terminology and icons from other meal planning and diet apps. Eirik and Isak viewed the design from a perspective of what could easily be implemented by programming. Eirik took the lead on implementing Maps and Calendar from Google API.

In our research process we found many other similar tools that help users generate meal plans. Such as *Eat This Much* and *LifeSum*. We wanted to make the tool as understandable and neat as possible. To do this we decided to present the tool in the first interface, by doing this, the user can easily understand what this website is about and use the tool without getting lost in other irrelevant features. We chose the name Plan Your Plate for our website because it is a concise and self-explanatory name for a meal planning website. In addition, it communicates what the website is about for the user. Also, by giving the website a name with an internal rhyme such as “plan” and “plate”, the name is easily memorized, and this will help retain more users.

We chose to make the website of Plan Your Plate with five interfaces. Clearly, our main interface is the meal planning tool, where the user can place the meals they want for each day. From Calendar the user can navigate to Maps to find their nearest grocery store. In addition to these three main interfaces the user can also view Frequently asked questions (FAQ) and get in touch with Plan Your Plate through a contact form. All these five interfaces have been placed in the header so that the user easily can navigate to the site of their own interest. To have a contact form and a FAQ page available to the user is important so that the user can solve any problems they might meet on Plan Your Plate. The contact page serves as a direct channel for users to reach out to Plan Your Plates administration and customer support. By adding these facilities to our prototype, we enhance the websites credibility and demonstrate accessibility and responsiveness to users’ needs. The contact-form is inspirated by Easy Tutorials’ YouTube video for creating an educational website design. This video will be linked at the end of the report in the recourses chapter.

3.1 Color scheme

The color scheme for this website is based on what we associate with food and health. Green is a color many people identify with food, and the color represents calmness, positivity, and well-being. This is why we chose a color scheme that includes a light pastel green color as the primary color of the website, because it gives a calming and soft look on the website. This color is used in the background of almost every interface. We chose a brighter and more distinguished shade of green as our secondary color to make a slight contrast between the two. This color also gives a fresher look, we decided to use this color mainly as a border-color for

design elements and in the logo. As an accent color we chose a dark green to make the details stand out for the user, this color is used in the borders of the elements in each interface. This is accordingly to the color rule “60-30-10” which is a guideline for creating visually pleasing designs. This principle says that 60% of the color should be the dominant color, the secondary color should only be in 30% of the elements on the page, and the remaining 10% should be an accent color. The color scheme and distribution of the colors can be seen in image 2.



Image 2: Our color scheme for Plan Your Plate

3.2 Layout

The layout of our website is overall a very simple, yet functional website design. It is important to use descriptions that can be recognized from other similar interactive tools or sources of nutritional information, to help users quickly understand and navigate our website. Our prototype displays nutritional information about the selected meals in a pie chart. The chart summarizes the combined nutritional values and includes a calorie count at the top. The pie chart is not something we found in other similar tools, but something we figured would help the user understand more about the nutrients in their food and see what number of nutrients in their meal plan consists of. The pie chart also only includes carbohydrates, protein and fat which is the nutrients people are more familiar with, and this makes the tool more understandable with universal language. The pie chart is featured in

Nutritional values:

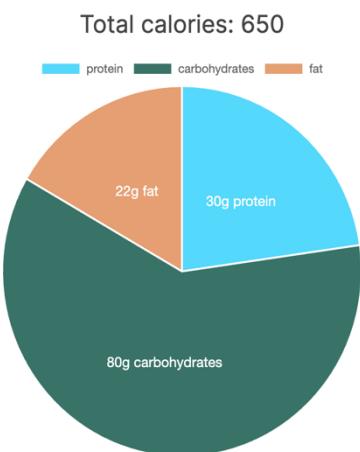


Image 3: Nutritional information in Plan Your Plate

image 3. An important reason for choosing a universal language on our website that are consistent with other sources, is that it creates a sense of credibility and trust. By giving the users familiar terminology about nutrition, they feel more comfortable and may use the tool in later occasions. This improves the user-friendliness and the user-experience. The layout for our meal planner tool is centered with a large amount of padding to the left and right. This creates a balanced and symmetrical website with a good amount of whitespace. Whitespace helps the user to easier digest the webpage's content and have a better visualization of the elements on the page. This is also a choice made for the user-experience and to keep the users focus.

An important design choice that is substantial in our design is the use of boxes to isolate each element in our design. All boxes have a light background-color, a green border, and border-radius. The reason for placing each element in boxes is to help the users isolate which content belongs to which part of the design to make it easier for them to navigate and interact with the elements on the page. The border-radius also helps soften the look of the website and give it a more inviting and approachable design. The boxes also create a visual hierarchy and is easier digested by users.

4.0 Implementation

The first implementations of our design consisted of making the calculator that will present meals based on the user's dietary preferences. In JavaScript we created simple functions to show the user which button they clicked, by changing the background-color to green and the font-color to white. As well as the function to remove background- and font-color on previously clicked buttons. Our assignment demands that we use JSON objects to display ingredients and nutritional facts about the dishes selected by the user. When we use JSON objects, we can easily access the data in our web application. Each JSON object contains data such as the name of the dish, the ingredients and nutritional information and we used JavaScript to display the data based on what the user have selected. When the user selects a dish, we use JavaScript to access the corresponding JSON object and display the data from this particular dish on the web page. We made different JSON objects for the different

categories of meals, such as “breakfast”, “lunch” and “dinner” with labels for the different dietary choices.

4.1 Calendar

In the implementation of Google Calendar, we used the Bootstrap library “FullCalendar”. To create a user-friendly experience, we wanted to make it possible for the user to drag the meal they want to the day they want to have it. To do this we had to use the “FullCalendar.Draggable” constructor in association with “GetElementById” as an item selector so that the user can click on a particular meal and drag it to the day of the calendar where they want to put the meal.

All the meals the user clicked on the meal planner is collectively stored as an array using local.storage.setItem(). This array is later acquired in the cal.js using JSON.parse() to retrieve it and use in our calendar. In our code for the Calendar the website retrieves arrays of meals which are stored in the key “meals” from the local storage. With a for loop, the code iterates and creates a new div-element for each meal with the class name “fc-event” with the meal text as its content, this is then appended to the “external-events-list” container. This is what makes the elements draggable and possible to be added to the calendar.

We created a variable for the elements with the ID “calendar” with the name “calendarEL” which contains the calendar, as well as a toolbar where the user can select if they want a weekly, monthly or daily meal plan. This also helps the user-experience in a way that the user easily can create a meal plan based on their own desires and goals. When the user clicks the checkbox “remove after drop” the meals will be removed from the “Draggable events” list which is triggered by our JavaScript function “drop”, this makes it possible for the user to place the same meals multiple times in the Calendar. The calendar.render() function is called to render the calendar on the website.

4.2 Google Maps

We used the google maps API for our website for displaying where users can find the nearest grocery stores and farmer’s markets. It is also possible for the user to add the stores they want to visit and add them to the calendar so they can plan their shopping trips accordingly. Each

shop also has discounts such as student discounts, vegetable discounts and etc. Displaying where the person is located we create a new marker, using the new `google.maps.Marker()` and inside setting location based on the position the user is in and changing the icon to a more fitting one, to distinguish from the rest of the store icons.

To code where all the stores were located we used the `service.nearbySearch` function where it, based on the radius we set, scans for stores in the area and creates a marker for each one using the `createMarker()` function which sets all the necessary data inside each marker. Such as, name of the store, distance, discount that is selected randomly from array, and the button to add to the info-window.

5.0 Testing and iteration

Throughout the implementation process we ensured functionality by testing our prototype with all members of the group. We discovered that our intended design where the user can input their own calorie goals and anticipated meals per day, might cause confusion for the user, because most people does not know how many calories they usually consume. In addition to that Plan Your Plate's main goal is not to help people lose weight or count their calories, but to suggest healthy meals and provide nutritional information about their meals. Because of this, we changed the meal planning tool to provide healthy meal suggestions based on their diet choices, where the user can choose for himself whether he should add the more calorie deficient suggestion to his grocery list. Also, by doing this, the user can more easily+ see what diet they find more appealing, without jumping to the next step not knowing what they have clicked. We also discovered that we did not provide the user with the possibility of signing up as a member of Plan Your Plate. This could be helpful for the user by giving them the opportunity of saving their grocery lists and perhaps make it possible for them to save recipes to their account. This would be a good next step for our website in a future iteration. Furthermore, we actively sought feedback and suggestions from our other team members. By using this approach, we leveraged multiple perspectives and ensure a well thought and user-friendly app. Our assignment, due to the short period of time, does not have any usability tests outside the team. This would be useful to identify potential issues with the design and test the apps usability. By conducting external users, we could also be provided with useful feedback that would allow improvements and adjustments before a final release of "Plan Your Plate".

6.0 Overall conclusion

To conclude, our project involved the development of a meal planner app called “Plan Your Plate” that aims to provide users with an organized and healthy approach to meal planning and grocery shopping. “Plan Your Plate” generates a suggestion of meals for the user to choose from based on their dietary preferences. When the user is happy with their meal choices, the ingredients are added in a shopping list that the user easily can edit based on what they already have in their fridge. In addition to generate meal plans, the user can add their selected meals in their calendar and plan shopping trips with the built in map.

Throughout this project, all members of the team have made significant contributions based on their skills and expertise. We have gained valuable insights from one another as we each mastered different aspects of our assignment in our own ways. Throughout the process, we actively sought tips and advice from fellow members, contributing to a collaborative and enriching experience. By using the Gannt iagram we established clear milestones, that fostered a well-structured and organized workflow as well as a clear communication of what has been done and what must be done.

In the design, we prioritized that the design should be user-friendly and aesthetically pleasing. To do so we have used a minimalistic design with a large amount of whitespace, created by a large amount of padding. We created an intuitive interface with a color scheme that can be associated with food and health, and by using boxes to isolate each element of the design we have created a visually pleasing design. Also, by using familiar terminology we can enhance user-friendliness and credibility. In the implementation of the design, we developed key features such as the meal suggestions, Calendar, and Maps. By using JavaScript, we achieved dynamic functionalities that enable the users to interact with the app effortlessly.

Overall, by providing users with a convenient and efficient way of planning healthy meals, generate shopping lists and locate nearby grocery stores, we successfully meet the needs of various user scenarios. With help from “Plan Your Plate” users can eat healthier, save more money, and create a positive relationship with food.

7.0 Recourses

- Easy Tutorials (23.03.21) “How To Make Website Contact Page Using HTML and CSS | Educational Institute Website Design”, YouTube, available from:
<https://www.youtube.com/watch?v=Xh1WrXxEWjc&t=0s>
- Figma prototype “Plan Your Plate”. (2023). Url:
<https://www.figma.com/file/MvOfWqDkMoos8djJCWTJyq/Designside?type=design&node-id=0%3A1&t=Z1shLh53y5Cn9qZz-1>
- Gannt diagram, Figma (2023). Url:
<https://www.figma.com/file/MvOfWqDkMoos8djJCWTJyq/Designside?type=design&node-id=21%3A2&t=Z1shLh53y5Cn9qZz-1>