GNG 2101 Deliverable C

Conceptual Design

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Introduction

The purpose of this deliverable is to develop a conceptual design for the product utilizing information obtained from previous deliverables and from the first client meet. Each team member produced a minimum of 3 product concept ideas, of which the most promising were developed further into a group design concept. This deliverable also provides an update to the project plan, where project tasks and responsibilities are added and updated. Finally, this deliverable contains a description of our design plan and list of questions for our second meeting with the client.

Conceptual Design

Based on the client interpreted needs, the required core functionality includes a checklist of tasks, multiple layouts (e.g. daily, weekly, monthly) with color coded tasks, offline functionality, aesthetically pleasing, easy to use, task reminders, and push notifications. Functional decomposition of the core functionality breaks down into the following sub-functions:

1. Monthly layout
2. Weekly layout
3. Daily layout
4. Checklist of tasks
5. Task reminders and notification system

Team Members' Design Concepts

With the core and sub- functionalities in mind, each team member produced 3 product concepts of either a subsystem or a global concept.

Table 1. Individual product design concepts by each team member.

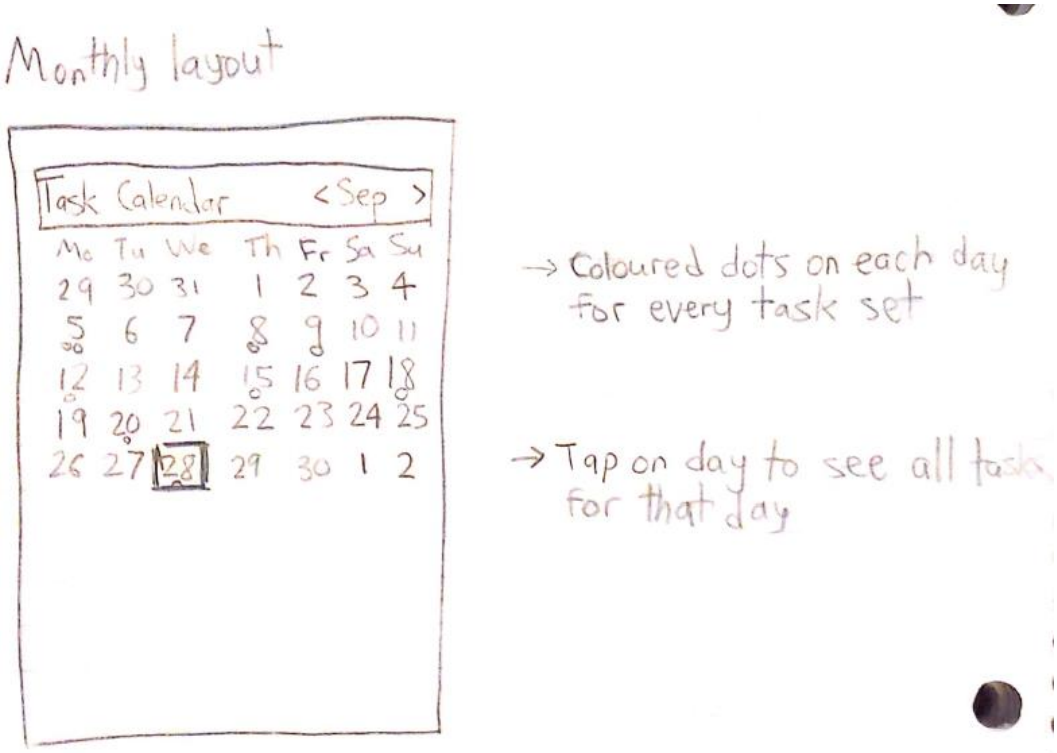
Lisa	1. Website using HTML/CSS/JS 2. Mobile app built using Appypie 3. Automated vs manual customization (colors, etc.) 4. Mobile app built in MS PowerApps
Dhwani	1. Offline, calendar app using Swift 2. Google chrome extension that connects to Google Calendar 3. Printable calendar/todo sheets
Hafsa	1. Mobile app using react native 2. Able to drag,add,and delete items easily 3. 3 layouts (monthly,weekly,daily)
Gabriel	

Figure 1. Concept for monthly layout by Gabriel.

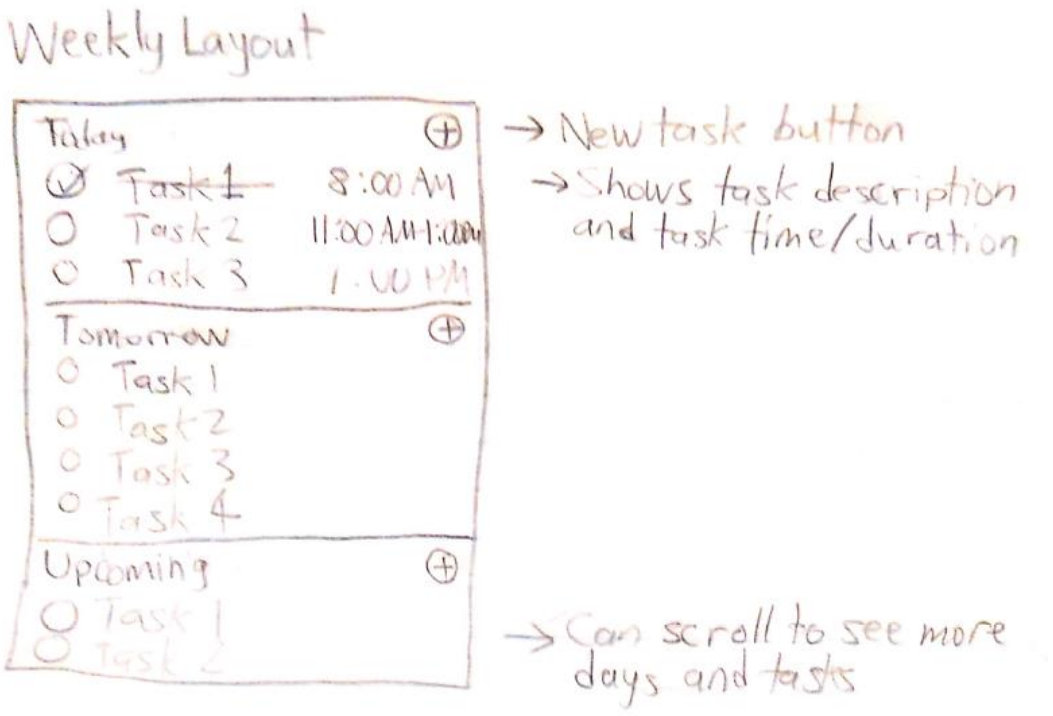


Figure 2. Concept for weekly layout by Gabriel.

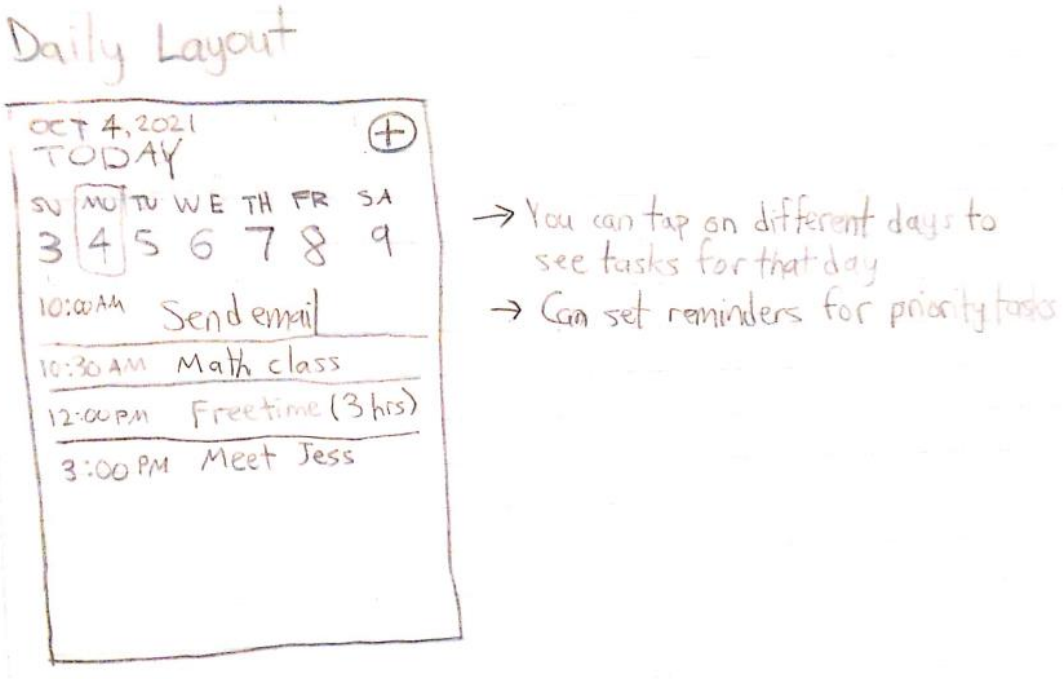
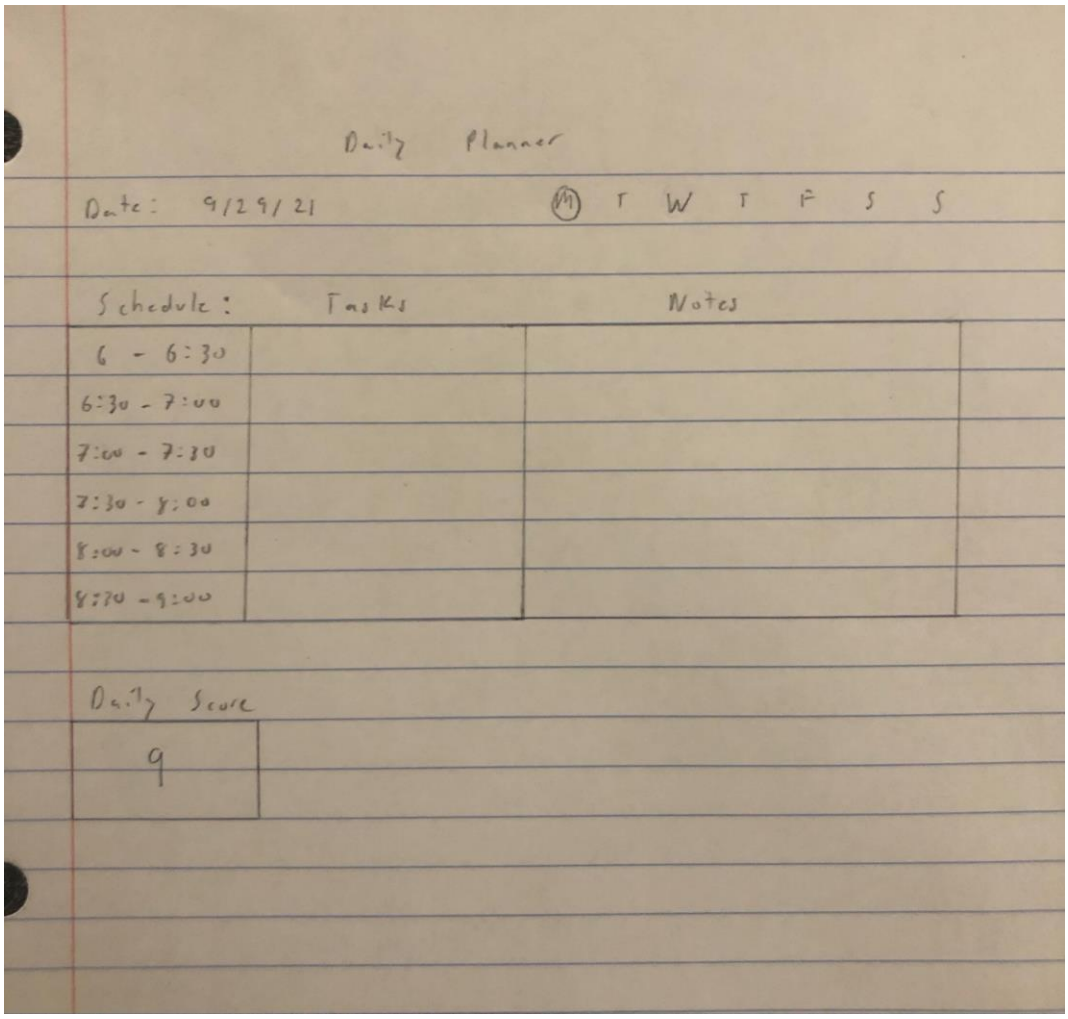


Figure 3. Concept for daily layout by Gabriel.

Kevin	 *Figure 4. Concept for monthly layout by Kevin.*

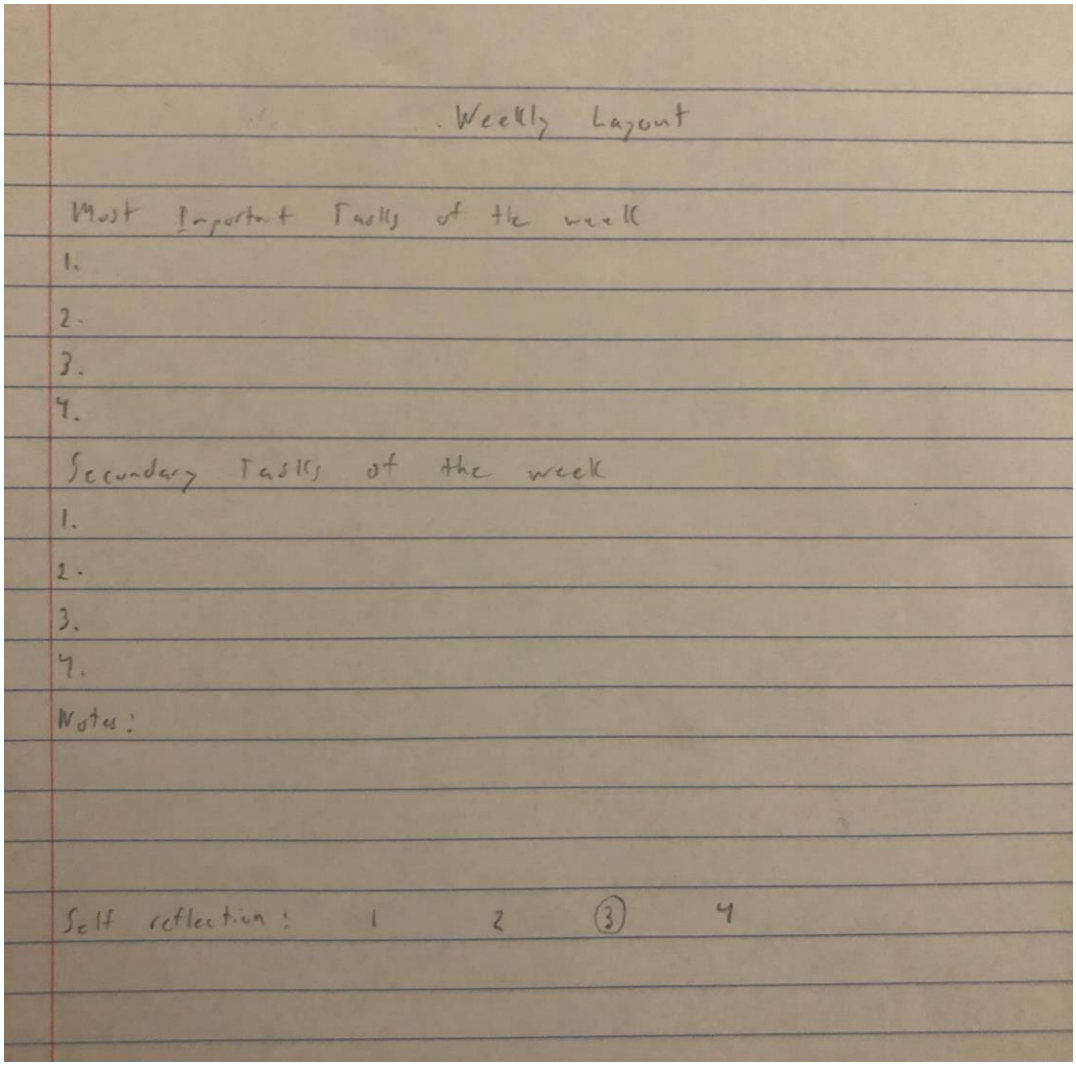
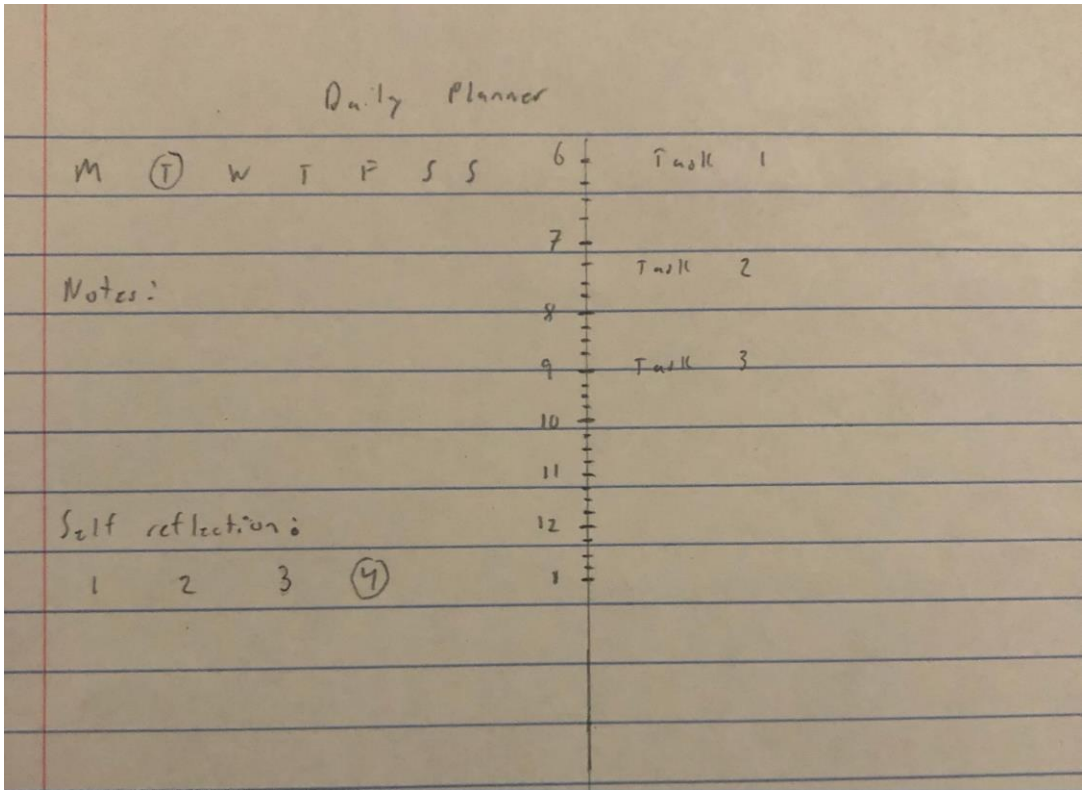


Figure 5. Concept for weekly layout by Kevin.

	 *Figure 6. Concept for daily layout by Kevin.*
Patrick	1. Phone application using Android Studio 2. Design similar to Microsoft To-Do 3. Website using React.js framework

Concept Evaluation

To analyze and evaluate the concepts, the pros and cons of each group member's ideas were listed. The concepts were evaluated based on the client's needs and the target specifications. Finally, we chose the most suitable concepts, which are in blue in Table 2 (below).

Table 2. Analysis of Concepts from Table 1.

Concept	Pros	Cons
Website using HTML/CSS/JS	• Very customizable (colour-coding, aesthetics) • Has access to all libraries that HTML and JS support • Can be used on iOS • Push notifications can be allowed in settings • Checklists can be added • Can be made simple to use • Takes up no storage	• Relies on internet co • Requires a lot of prog of the 3 languages to and professional • Startup time is relativ needs to start, then w
Mobile app built using Appypie	• Can be used on iOS • Can send push notifications • Support colour-coded layouts and customization for aesthetics • Can be used offline	• Unfamiliar app-maki
Automated vs manual customization (automated uses default settings)	• Automated customization makes the app lighter • Manual customization allows for creativity and personalization for each individual user	• Automated customiza terms of personalizat • Manual makes the ap storage) and more co
Mobile app built in MS PowerApps	• Can be used on iOS • Easy to build an app on • Allows customization for colour-coding and aesthetics	• Generates visually ba are inexperienced wit • Unfamiliar app-maki
Offline, calendar app using Swift	• Offline, client can access from anywhere • Swift is an Apple programming language deployed on App Store, client uses Apple products • Calendar allows for high-level overview	• High-level overview busy client • Difficult to learn Swi application in short ti
Google chrome extension that connects to Google Calendar	• Chrome extension is an easy setup • Client is familiar with Google Calendar • Coding of application will not take long	• Limited personalizati • Only works on Goog
Printable calendar/todo sheets	• Easy to build • Can be personalized to a high degree • Client can be a huge part of the process	• Client would like paper component • Not innovative
Mobile app using React Native	• Supports both IOS and Android app development • Able to be used offline • Can send notifications	• Requires knowledge mobile development • Our team has not wo

Able to drag, add, and delete items easily	• Can accommodate to changes • Makes for a user-friendly interface	• May take a lot of tim
3 Layouts (monthly, weekly, daily)	• Shows the upcoming tasks in different layouts	• May take a lot of tim
Gabriel's Concept 1: Monthly layout (Figure 1)	• Monthly layout shows calendar overview of inputted tasks • Easy to use	• User has to set up eac • Doesn't give user rem • User can't add new ta • Only a UI concept, d aspects (storage, mem
Gabriel's Concept 2: Weekly layout (Figure 2)	• Can mark tasks as complete off the checklist • Can set reminders • Can add new tasks to day	• No notes/journal sect • Only a UI concept, d aspects (storage, mem
Gabriel' Concept 3: Daily layout (Figure 3)	• Shows daily schedule of tasks with times and descriptions • Can set timed reminders for tasks	• Only a UI concept, d aspects (storage, mem
Kevin's Concept 1: Monthly layout (Figure 4)	• Daily layout • Organized pretty clearly • Able to self-reflect • Space to write notes • Easy to use	• Not very customizabl • Not very aesthetic • Divided into 30 minu • A UI concept, techni
Kevin's Concept 2: Weekly layout (Figure 5)	• Weekly layout • Very easy to use • Simple layout • Able to self-reflect • Space for notes	• Needs a space to put • Not aesthetically plea • Not very customizabl • A UI concept, techni
Kevin's Concept 3: Daily layout (Figure 6)	• Daily layout • Day is clearly shown • Aesthetic • Unique design • Space for notes • Able to self-reflect	• Divided into 15 min t • Planner is a little com • Needs a space to put • A UI concept, techni
Phone application using Android Studio	• Simple • Potentially a lot of color variety • Offline mode	• Potentially needs mo functionality
Design similar to Microsoft To-Do	• Defined template • Good aesthetic	• Might need access to

Website using React.js framework	• Simple to implement • Can add on multiple features	• Needs access to the i

Following the analysis of all the concepts, we decided to exclude all concepts that depend on an internet connection, since one of our client's needs is that the planner is available offline. Since our team members have little to no experience in app development, we have decided to temporarily select all 3 remaining app development platforms to further explore: Microsoft PowerApps, React Native, and Android Studio. Of the two proposed layout formats, we decided to use the design of the layout in Gabriel's concepts (Figures 1 - 3) since they are the most familiar and straightforward. However, we loved the self-reflection aspect from Kevin's concepts (Figures 4 - 6): the note option and the daily satisfaction rating, so we have decided to incorporate those features as well. The client has expressed her desire for personalization and creativity within the app, so our goal is to have personalization options for the user that would, for example, allow the user to change colours of meeting slots. As per the client needs, we will also try to include drag & drop features.

Group Design Concept

Based on the global and subsystem concepts, a group design concept was developed and further detailed using wireframe visualization. The group design concept is for a mobile application that organizes your tasks and deadlines by multiple layouts, making it easy to both see your month at a glance, your weekly schedule, or a day-to-day list of action items. The app's multi-view layout allows quick swapping of organizational views using user entered information. The app can also create reminders and alarms for important events using notifications. The following visual representations show the group design concepts for the multiple layouts of the productivity planner.

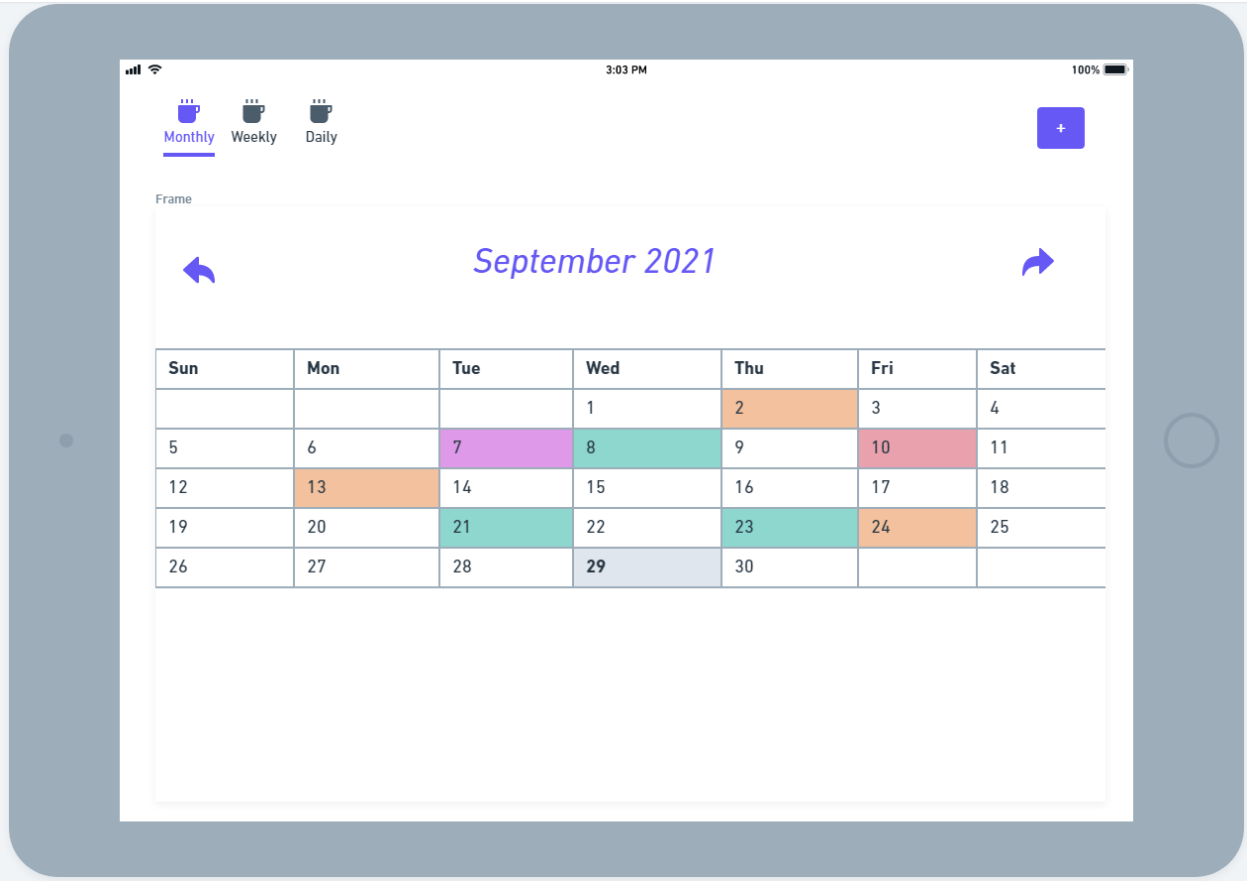


Figure 7. Monthly layout group design concept of the productivity planner.

The monthly layout shows an overview that is useful for showing deadlines, or the date of an appointment or event. Days of the month will have different colors on those days, for different tasks that the user has color coded themselves. The user can also switch to a different layout at the top of the screen. The plus button at the top of the screen allows new tasks or events to be added to the planner.

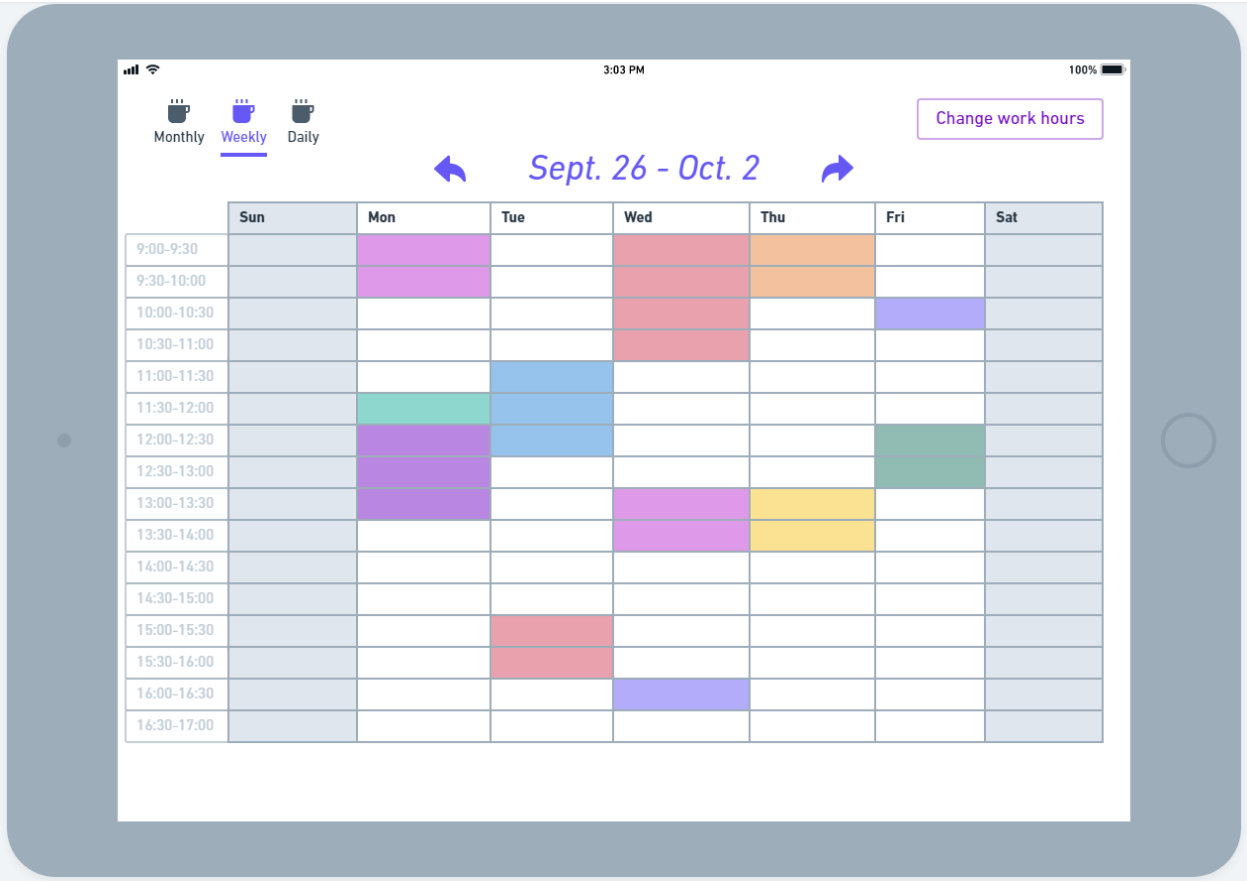


Figure 8. Weekly layout group design concept of the productivity planner.

The weekly layout provides a weekly schedule of tasks and times. At the top of the screen the user can switch to a different layout, as well as see the current week and swap to another week. Calendar shows work hours, or from earliest to latest event, if these events are outside work hours. In this example of weekly layout, hours are 9:00 to 17:00.

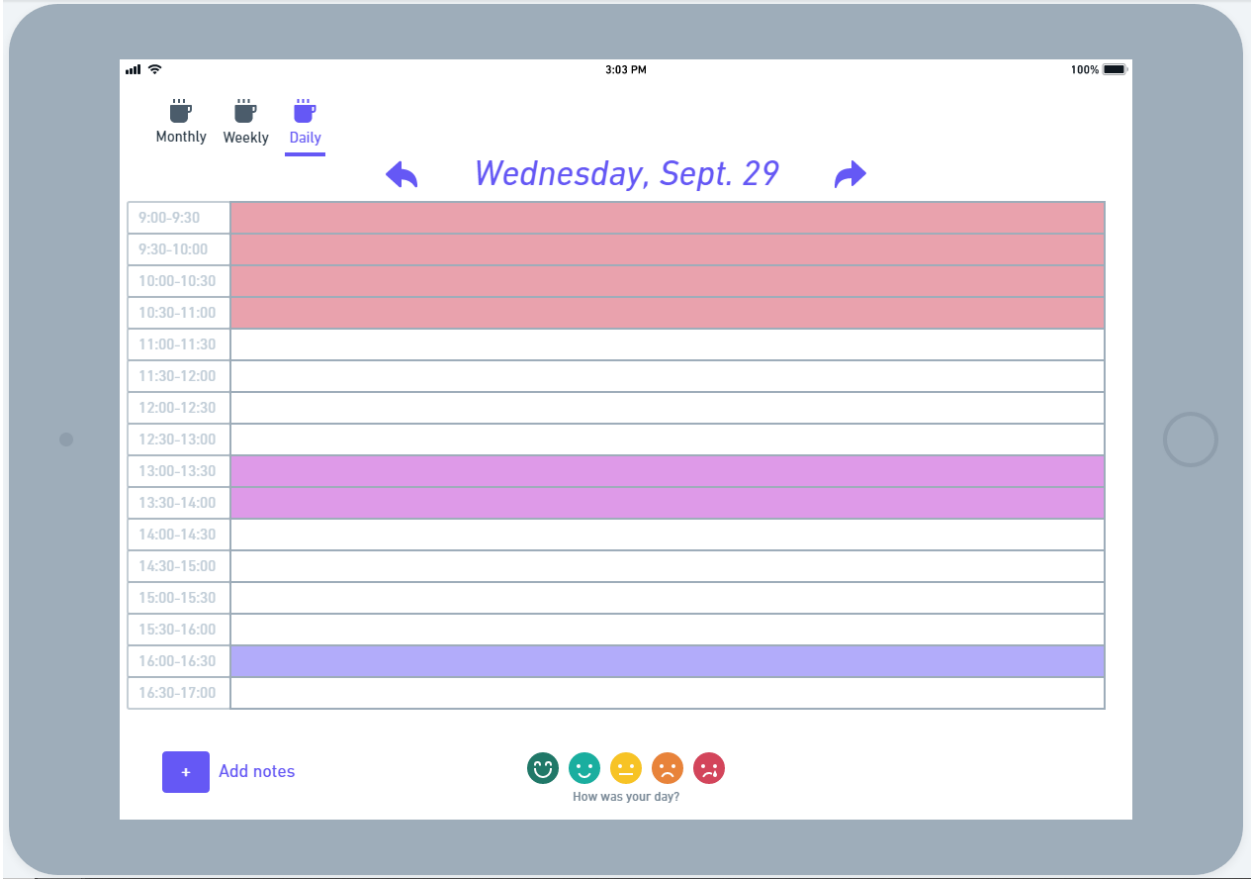


Figure 9. Daily layout group design concept of the productivity planner.

The daily layout shows more details of each task and more granularity of time scheduling. More details can be displayed on the daily layout. All events and tasks can be color coded to allow ease of use at a glance. The user can add notes using the add notes button in the bottom left corner of the screen. The user can also track their daily mood without needing any text input by pressing on one of five faces.

Conclusions and Recommendations for Future Work

After a first meeting with the client, a list of client needs were turned into target specifications for the product. Based on the client's needs and specifications, each group member came up with global and sub-function design concepts that were then analyzed and evaluated on

their pros and cons. These design concepts were then combined into a group design concept that will be used to guide the production of the first prototype.

Future work consists of getting client feedback on the work produced so far and furthering the product design. The next client meeting will be used to determine the direction of the project moving forwards and whether it is necessary to make adjustments to the specifications and features to achieve the client needs. The design concept will also be further developed to determine feasibility. The first prototype will consist of further refinement of the design concept and testing of essential functionalities.