

GNG 2101

Design Project User and Product Manual

Productivity Planner

Submitted by

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List of Acronyms

Table 1. List of Acronyms.

Acronym	Definition
BOM	Bill of Materials
IDE	Integrated Development Environment
JS	Javascript
QR	Quick Response
UI	User Interface
UPM	User Product Manual

1 Introduction

This User and Product Manual (UPM) provides the information necessary for users to effectively use the Productivity Planner and for prototype documentation. Besides users, this document is also meant for developers who may consider working to further enhance the app, as it helps to understand how the current version of the app works and provides suggestions for improvement. This document starts by providing an overview on the application, then describing its purpose and the function of each component of the application. Next, it discusses troubleshooting and technical support, information on prototyping efforts, and provides recommendations for any future work on the application.

The productivity planner was developed to help improve the productivity of the user through the organization and planning of the tasks and events they wish to accomplish in their daily lives, as well as mood tracking to help troubleshoot any pitfalls that they may encounter. With our client's feedback taken into account through multiple client meetings, a final functional prototype was created to fulfill this purpose.

2 Overview

Our client is a medical school student and the problem is that they have a heavy workload and establishing and maintaining a healthy work-life balance is challenging, so tracking productivity is of utmost importance. To solve this problem, a user-friendly mobile application was developed that would serve to alleviate some of these issues by automating reminders and organizing the client's schedule, while also appealing to users with wide-ranging organizational needs. The main purpose of the Productivity Planner is to help increase the productivity of the user through the planning and organization of events and tasks in their life. This is important for students, and especially medical school students, since there is a large amount of tasks to keep track of all the time, which can be extremely stressful and overwhelming.

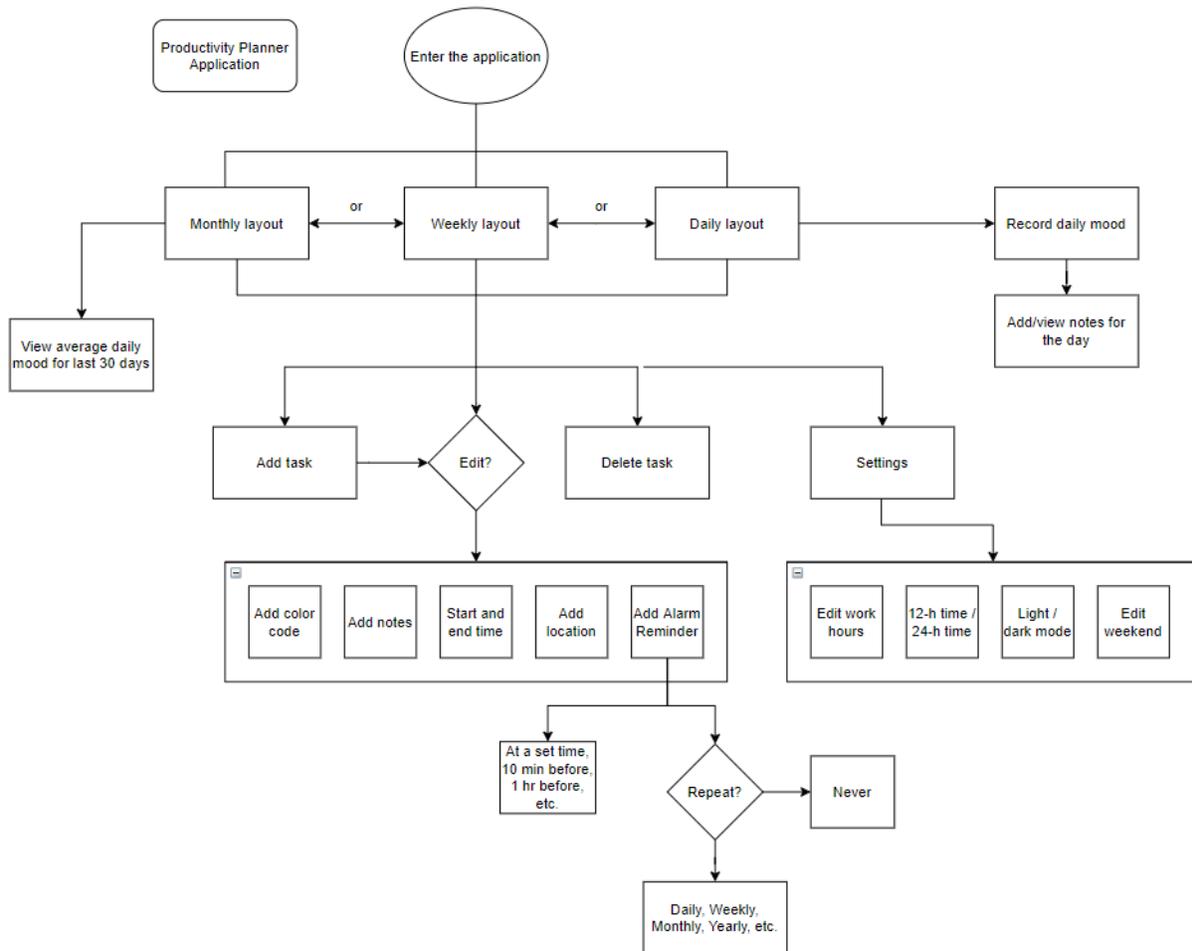
The resulting product is the Productivity Planner. The Productivity Planner is a mobile application that encompasses a suite of tools for personal productivity and organization, designed with ease of use and aesthetics in mind. Though other planners exist, the Productivity Planner provides a unique implementation of the productivity theory known as the 'Forgetting Curve'. This theory hypothesizes that information is lost over time when there is no attempt to retain it. Therefore, the Productivity Planner will set multiple automatic reminders per event for user-set tasks, in order to remind the user before they forget. Additionally, the Productivity Planner has a daily mood check-in, which when used will allow the user to analyze how their mood affected their productivity.

Key differences of our app, compared to other planners on the market, are the multiple automatically-set reminders per task/event (based on the forgetting curve), the mood tracking component, and the daily notes option. In addition, our app is usable offline, which is common but even some popular planners don't have this feature, such as web-based planner apps. Our planner is geared towards students, so it is better for students, as they can input tasks/events quickly, without setting reminders, while still getting multiple reminders to ensure they are reminded early enough so they have time to finish even larger projects on time, and to help remember tasks even while busy with other tasks. In addition, the mood tracking feature is very

useful to troubleshoot issues. For example, if a student notices their grades for assignments due in a certain week were noticeably lower, they can refer to the mood tracker to see how they felt that week and identify the root of the problem, which can help them avoid this pitfall in the future, ultimately improving their productivity.

Our app enables a user to add/edit/delete events, add daily notes, and add a daily mood. When an event is added, a title, date, time, and colour are set and the event can be viewed in any of the three layouts available: monthly, weekly, or daily. Furthermore, reminders are visible in the weekly view, and daily notes and mood tracker can be viewed from daily view. The app is a phone app that can be used by downloading the Expo Go app and scanning the provided barcode. After that, the user is all set up to use the app and can access all of its functionalities. The app works offline by saving any changes made offline and syncing them once the phone is connected to the internet again. The app can be used on both iOS/macOS and Android operating systems.

Figure 1. Flowchart diagram of the functionality of the the productivity planner prototype

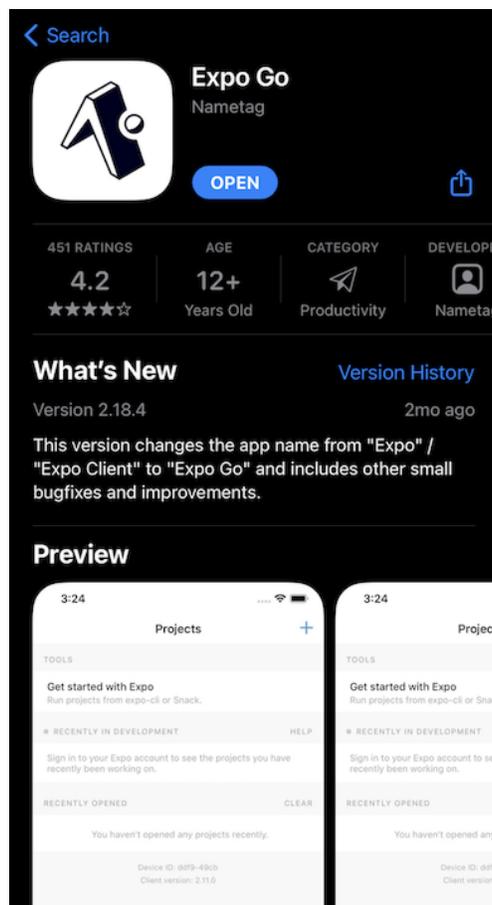


3 Getting started

3.1 Set-up Considerations

Internet connectivity is needed for downloading the app. To install the application on your mobile device, first download the Expo Go (also known as ‘Expo’ or ‘Expo Client’) app on the Play Store/App Store as shown in Figure 2.

Figure 2. Expo Go App necessary for installation of the Productivity Planner.



After installing Expo on your device, scan the QR code in Figure 3 using the camera app on your Android or iOS device. The QR code can also be downloaded at:

https://expo.dev/@gkrau077/prod_planner

Figure 3. QR code for installation of the app.



prod_planner

Preview channel "default"

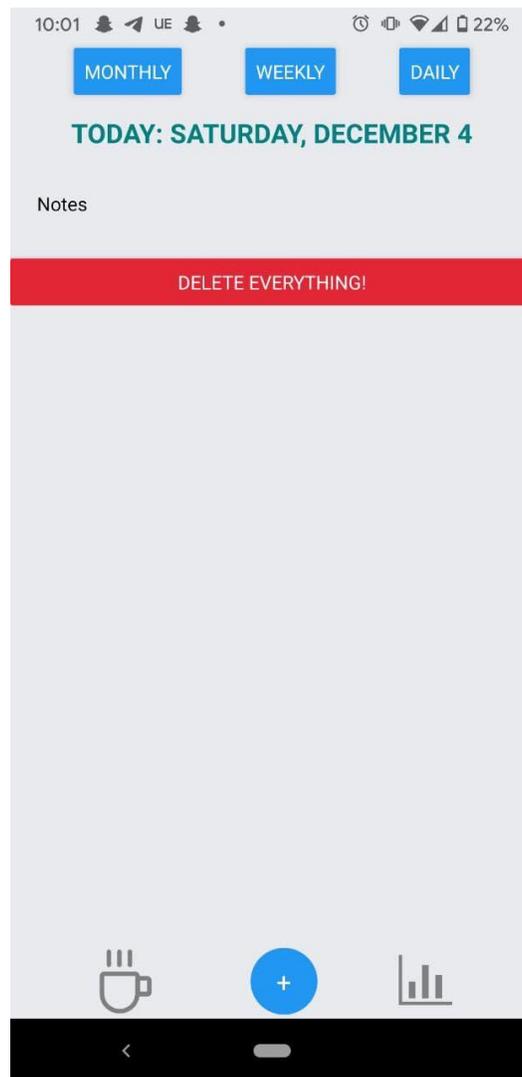
Open the camera app on your device and scan the code below



After scanning the QR code with the camera app on your device, the Productivity Planner will begin downloading and installing on your device.

After installation, the splash screen will appear and the Productivity Planner will open. The screen should display as shown in Figure 4, with the current date listed on the screen.

Figure 4. Initial screen after successfully opening the Productivity Planner.



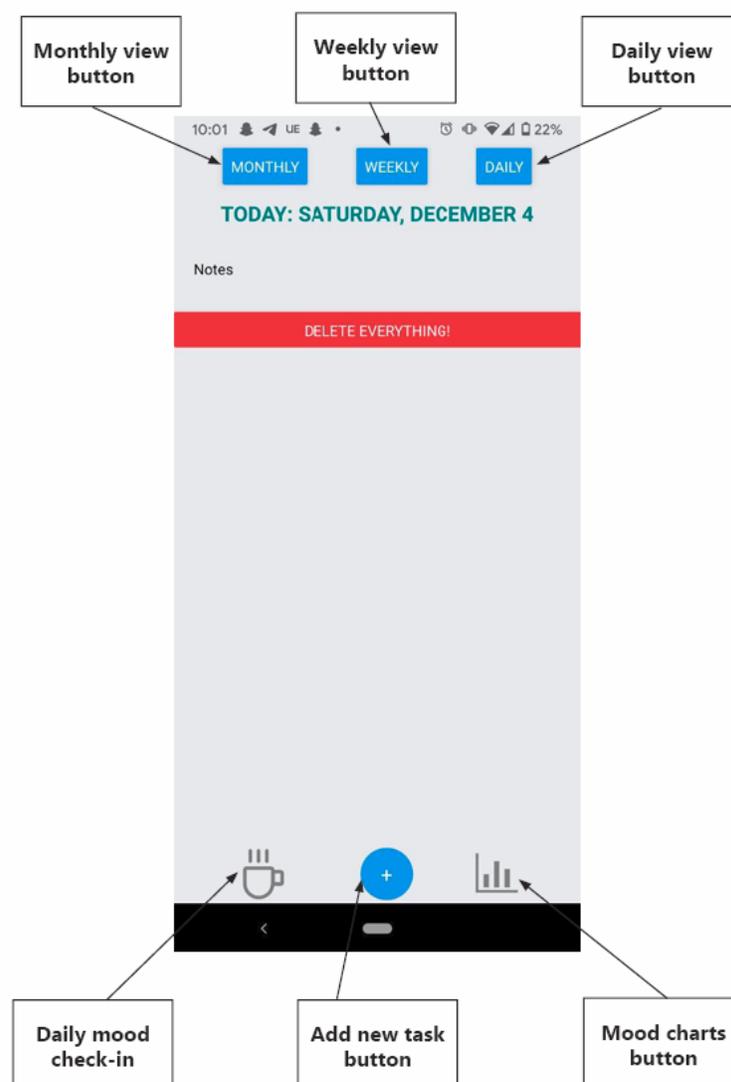
3.2 Accessing the System

After the app is installed on the device, all functionality can be accessed offline. The app can be re-opened by scanning the QR code again, or by opening the Expo Go app and selecting 'prod_planner' from recent projects listed.

3.3 System Organization & Navigation

There are three main layout views in the planner app: Monthly, weekly and daily. The three buttons to navigate to each layout are always visible at the top of the screen. At the bottom of the screen are the daily mood check-in button, the add new task button, and the mood stats button, which are also always visible. The middle portion of the screen changes based on which layout view (monthly, weekly, daily) is selected and displays the users added tasks and reminders. The functionality of each feature of the device is shown in more detail later in this manual.

Figure 5. Productivity Planner organization and navigation.



3.4 Exiting the System

The app can be closed similarly to other apps on Android and iOS devices. Upon closing the app, any added tasks and reminders will be saved automatically, as well as any mood data.

4 Using the System

The following subsections provide detailed, step-by-step instructions on how to use the various functions or features of the Productivity Planner.

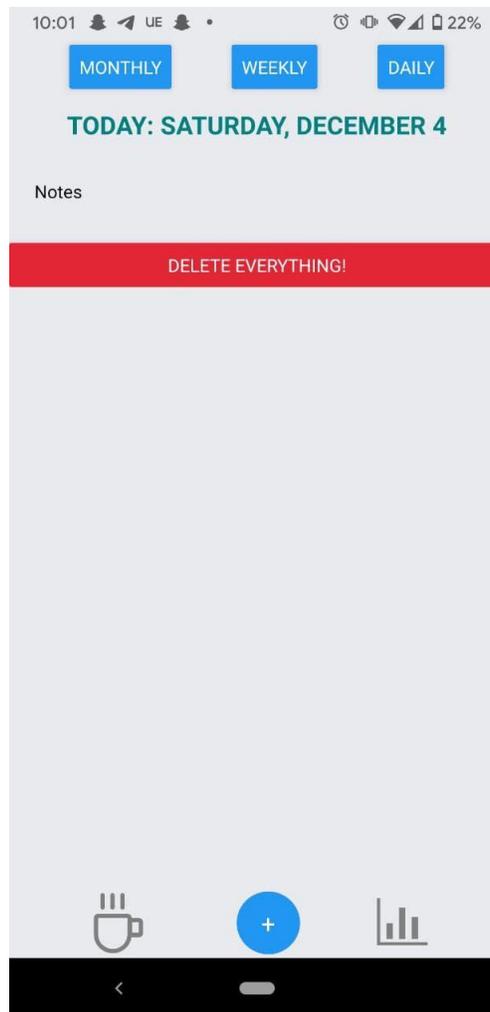
4.1 Productivity Planner

The Productivity Planner features consist of the daily layout, weekly layout, monthly layout, notes section, and add new tasks button and screen. Each of these features is explained in the following sections.

4.1.1 Daily Layout

The daily layout can be accessed at any time by pressing the 'Daily' button at the top of the screen. At the top of the daily view, the day's date is displayed. On the daily layout view, all added tasks are displayed in order of task start time. The task's title and duration are displayed so that the user has a list of tasks they have planned for the day. Under the list of daily tasks is the notes section. The user can also tap on the notes section to add any notes for the day they would like.

Figure 6. Daily layout view.



4.1.2 Weekly Layout

The weekly layout can be viewed at any time by pressing the ‘Weekly’ button at the top of the screen. On the weekly layout view, all added tasks are displayed for each week, along with the tasks start and end time. The week on display can be changed by pressing the left and right arrow buttons above the listed tasks. Added tasks will receive automatically generated reminders set two days and one day before each task.

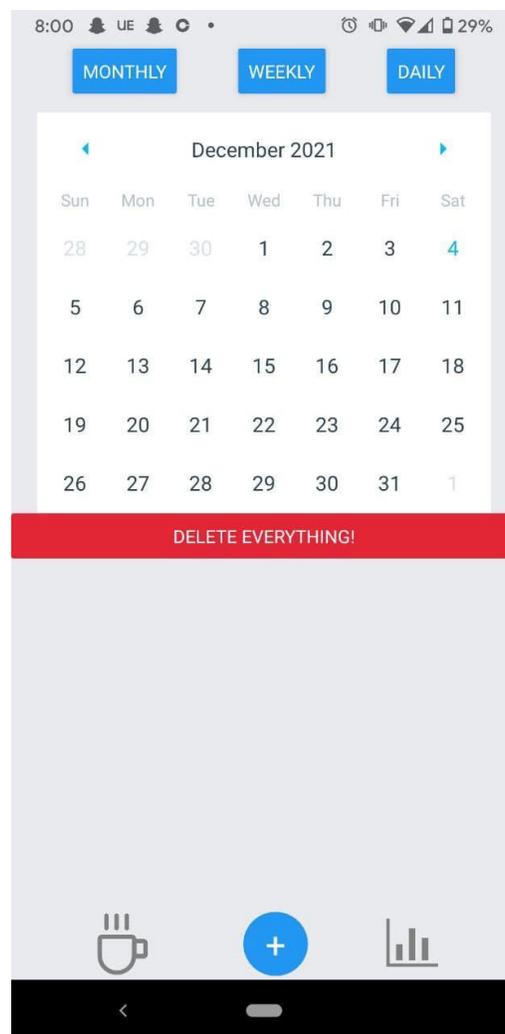
Figure 7. Weekly layout view.



4.1.3 Monthly Layout

The monthly layout can be viewed at any time by pressing the ‘Monthly’ button at the top of the screen. On the monthly layout view, all added tasks are displayed as a colored line on the day the task is scheduled for. The color of the line is the color that was originally chosen by the user for each task. The displayed month can be changed by pressing the left and right arrow buttons above the days of the month.

Figure 8. Monthly layout view.



4.1.4 Add New Task

The user can add new tasks by pressing the '+' button in the bottom middle of the screen. This will bring up the 'Add New Task' screen. If the button was pressed accidentally, the user can close the 'Add New Task' screen by pressing the 'Cancel' button.

To add a new task, first tap the space that says 'Title of Event', and type the title of the event using the on-screen keyboard.

Next, press the 'Date' space, which will allow the user to select the date they want the task to take place on.

The time of the event can be selected by pressing on the 'Time' space, where the user can select the time by the clock or by typing the time on their keyboard.

The duration of the event can be selected by pressing the 'Duration (Hours)' box. A dropdown list of the duration in hours can then be selected.

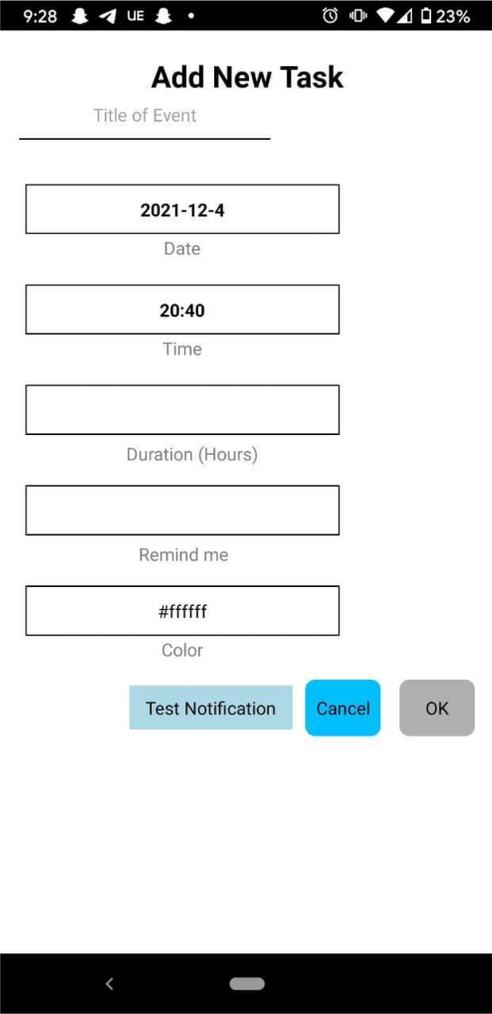
When the 'Remind Me' button is pressed, a dropdown list of times before the event will be displayed (i.e. At time of event, 15 min before, 30 min before, etc.). Selecting one of these options will schedule a notification that will be sent to the user at that time, with the name of the event to be reminded of.

The color can be selected by pressing the 'Color' box, bringing up the color picker. The user can select their chosen color by using the color wheel, with the chosen color displayed in the circle in the center of the screen. The two bottom sliders on the color wheel picker adjust the color's saturation and brightness, if desired. After the right color is selected, it can be chosen by tapping on the circle in the center of the screen.

The 'Test Notification' button allows the user to see instantly see a preview of the notification reminder they will receive, with the event title and reminder time they had input.

After all the mentioned components of the new task are selected and entered, the ‘OK’ button will turn blue and can be pressed, adding the new task to the user’s planner.

Figure 9. Add New Task screen.



4.2 Mood Tracker

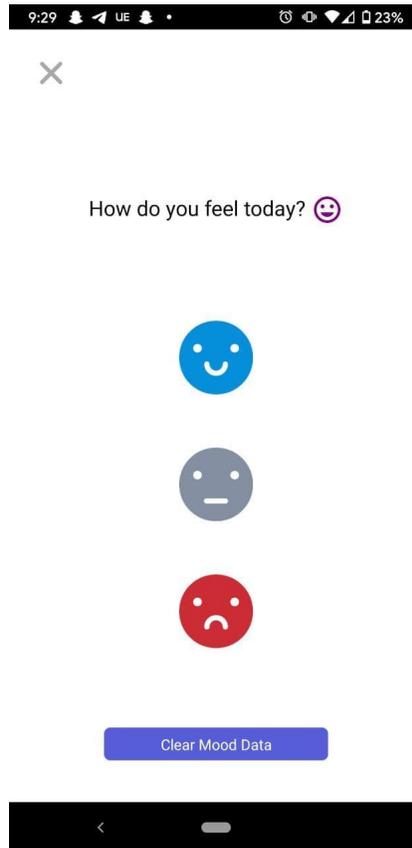
The mood tracker features consist of the daily mood check-in button for selecting how you feel today, and the mood statistics button for viewing information about user mood data.

4.2.1 Daily Mood Check-In

The daily mood can be selected by pressing the mood check-in button on the bottom right corner, displayed as a coffee cup icon. Upon pressing the icon, a screen will appear where the user can select their daily mood as shown in Figure 10. The user can press the blue 'smiling' face for a good mood, the grey 'meh' face for an average mood, or the red 'frowning' face for a bad mood. If the user does not want to select a mood at that time, they can also press the 'x' button in the top right corner of the screen to close the mood check-in without making any changes to the mood.

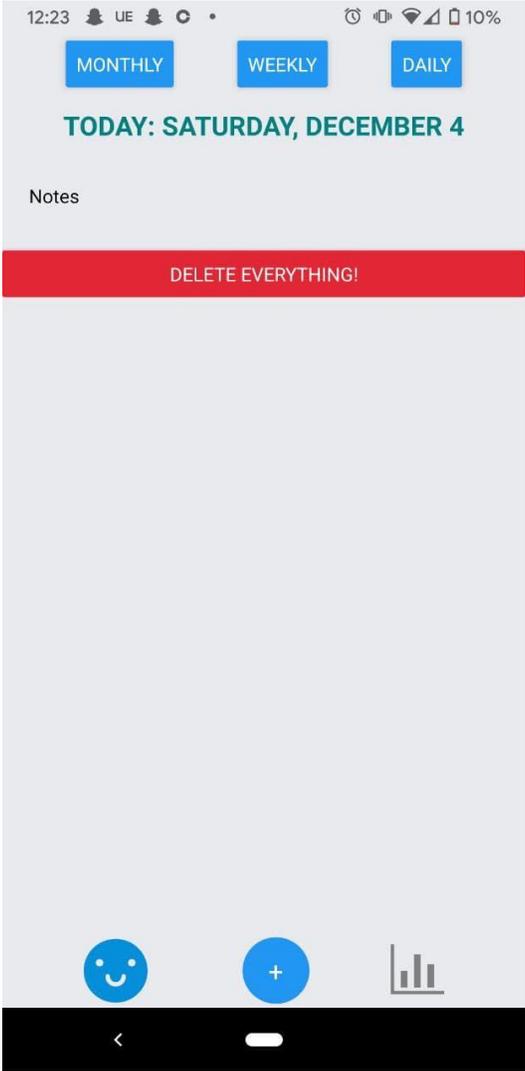
At the bottom of the mood check-in screen is the 'Clear Mood Data' button. All mood data is stored locally on the device, but all mood data can be cleared by the user by pressing this button.

Figure 10. Daily mood check-in screen.



The user will know they have successfully selected their daily mood as the mood check-in screen will close, and the bottom right icon will change to the selected daily mood icon and color.

Figure 11. Icon change after mood selection.

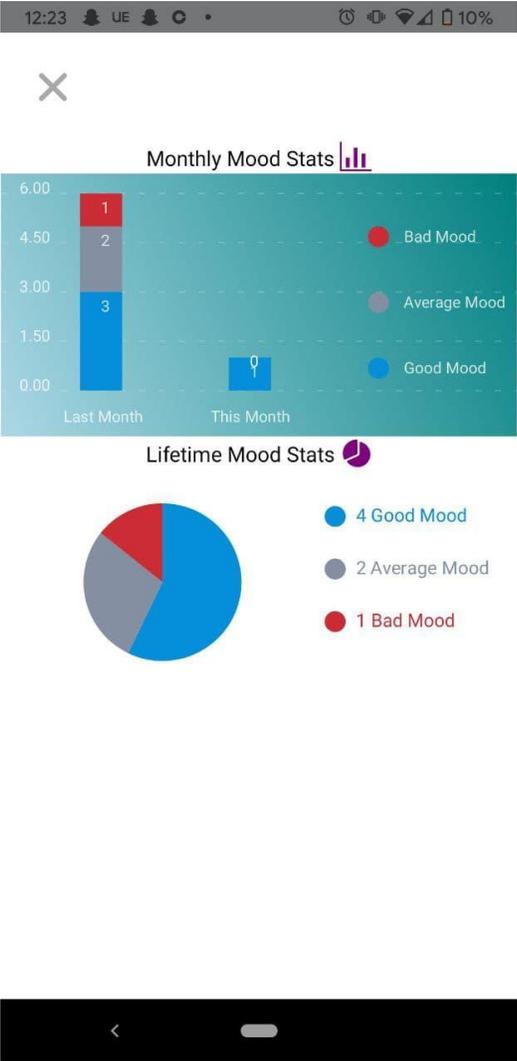


4.2.2 Mood Statistics

The user can view information on their mood data by pressing on the mood statistics button in the bottom right corner of the screen, displayed as a graph icon. Upon pressing the mood statistics button, the mood statistics screen will open, and can be closed by pressing the 'x' in the

top right corner of the screen. The mood stats are displayed on a monthly basis with a stacked bar chart, as well as showing the lifetime mood stats showing the cumulative moods that have been selected so far.

Figure 12. Mood statistics screen.



**Note: some screenshots of the app in this document contain temporary testing features for developers (such as the 'DELETE EVERYTHING!' button), as there are a few features being developed at the time of creating this document.*

5 Troubleshooting & Support

The best method for troubleshooting errors with the Productivity Planner application is restarting it. If this does not work, users could try to reinstall the Expo Go application on their device and restart the process.

5.1 Error Messages or Behaviors

There are currently no error messages sent by the application to the user. If any bugs appear in the application, the application may automatically exit and need to be restarted, or our developer team representatives may be contacted for support (see section 5.3).

5.2 Special Considerations

All data entered into the productivity planner is stored locally on the device. Therefore if the app is removed from the device, or the device memory is cleared, all user data will be lost.

5.3 Support

In case of emergency assistance and system support relating to the Productivity Planner, please contact Patrick Huang or Gabriel Krausert via email at phuan097@uottawa.ca or gkrau077@uottawa.ca with a description of the issue in detail.

6 Product Documentation

6.1 Productivity Planner Documentation

6.1.1 BOM (Bill of Materials)

Since this is a software project, all software was free to use and open-source to build the Productivity Planner. The following table shows the software frameworks and libraries used to build the Productivity Planner.

Table 2. Bill of Materials.

Component	Description	Cost
React Native	Open source JavaScript UI software framework to create native Android and iOS applications	Free to use
Expo	Open source platform for creating universal native apps with React and JavaScript. Used to package the software so users can install and run the app on their devices.	Free to use
Node.js	Open-source, cross-platform, back-end JavaScript runtime environment	Free to use
React-native-color-picker library	React Native implementation of color picker library	Free to use
React-native-modal-datetime-picker library	React-Native datetime-picker library for Android and iOS	Free to use
React-native-calendars library	React Native Calendar Components library	Free to use
React-native-weekly-calendar library	React Native Weekly Calendar component library	Free to use
React-native-chart-kit library	React Native Chart Kit library	Free to use

6.1.2 Equipment List

Also needed to build the prototype is an IDE capable of running JavaScript such as [Visual Studio Code](#), as well as a device such as an Android phone or iPhone to run the Productivity Planner prototype.

6.1.3 Instructions

In the following GitHub repository, it shows the code used to build the Productivity Planner prototype and instructions on how to design the software using the platforms, frameworks and libraries specified in the BOM.

https://github.com/patfire12345/prod_planner

6.2 Testing & Validation

The first test done on the prototype for the final design's validation was firstly asking the client for feedback. The client provided valuable feedback on our prototype, both positive and negative. For positive feedback, the client said she liked how we did daily, weekly, and monthly layouts, and said she liked the offline functionality. The client also provided feedback narrowing down features that were dealbreakers for them and which features were not necessary (such as dark mode, which our team taking this feedback decided to not proceed with and to instead focus on dealbreaker features of the app that *were* important to our client). Negative feedback which we improved upon included the client asking us to make notifications appear permanently, and the design to be cleaned up. Other than client feedback, we also got testing and validation from within our team. Whenever a team member implemented or updated a feature, they submitted a pull request on our shared Peak Productivity Github repository. This pull request was done on a separate branch so as to not crash the main branch. To merge this new branch with the main branch, another team member pulled, reviewed, and tested the new code added, and provided feedback if necessary. If the branch worked with no bugs and did not crash when tested, the other team member merged it with the main branch. This merging was not done by the member who proposed the change.

Figure 13. Github branches

The screenshot shows the GitHub repository page for `patfire12345/prod_planner`. The repository is public and has 1 Watch, 2 Stars, and 1 Fork. The navigation bar includes Code, Issues, Pull requests (1), Actions, Projects, Wiki, Security, and Insights. The main content area is titled "Branches" and includes a search bar for branches. It is divided into sections for "Default branch" and "Active branches".

Branch Name	Updated	By	Commits	Actions
master	Updated yesterday	by gkrau077	21 0	Default
feature/spaced_repetition	Updated 12 days ago	by patfire12345	21 0	#8 Merged
update/changeDailyDay	Updated 13 days ago	by patfire12345	22 4	#6 Open
feature/updateTask	Updated 19 days ago	by Hsala089	29 2	New pull request

Figure 14. Github pull requests

The screenshot shows the GitHub repository page for `patfire12345/prod_planner`, specifically the Pull requests section. The repository is public and has 1 Watch, 2 Stars, and 1 Fork. The navigation bar includes Code, Issues, Pull requests (1), Actions, Projects, Wiki, Security, and Insights. A notification banner at the top encourages labeling issues and pull requests for new contributors. Below the notification, there are filters for pull requests, including a search bar with the query `is:pr is:open`, and buttons for Labels (9) and Milestones (0). A "New pull request" button is also visible. The main content area shows a list of pull requests, with one open pull request titled "<update> Changed Daily Styling" by patfire12345, which was opened 13 days ago and has 2 comments.

Label issues and pull requests for new contributors
Now, GitHub will help potential first-time contributors discover issues labeled with `good first issue` [Dismiss](#)

Filters Labels 9 Milestones 0 [New pull request](#)

Open/Closed	Author	Label	Projects	Milestones	Reviews	Assignee	Sort
<input type="checkbox"/> 1 Open <input checked="" type="checkbox"/> 9 Closed							
<input type="checkbox"/> #6 <update> Changed Daily Styling	patfire12345						2

ProTip! Add `no:assignee` to see everything that's not assigned.

7 Conclusions and Recommendations for Future Work

One very important lesson learned during this project is that accessibility needs to be built into a product from the beginning stages of a project. Devices and software that are built with accessibility in mind allow more inclusive designs that allow more users to effectively solve problems. In this vein, the Productivity Planner was built with ease of use in mind to allow busy people with hectic workloads to organize their tasks more efficiently.

For future work on this project, it is recommended that a system that allows for ‘checking off’ of tasks after they are complete, so it is easier for the user to see which tasks they don’t need to worry about anymore. Also a more customizable reminder system would improve ‘notification fatigue’ where the user may become tired of seeing so many automatic reminders for tasks. Therefore, recommended future work also would be a way for the user to customize the frequency of reminders that they receive.

8 Bibliography

Team A3. Deliverable B. Needs Identification and problem statement, GNG 2101A, 2021.

Team A3. Deliverable C. Conceptual Design, GNG 2101A, 2021.

Team A3. Deliverable D: Detailed Design, Prototype 1, BOM, GNG 2101A, 2021.

Team A3. Deliverable G: Prototype 2, GNG 2101A, 2021.

APPENDICES

9 APPENDIX I: Design Files

Table 3. Referenced Documents.

Document Name	Document Location and/or URL	Issuance Date
GitHub Repo	https://github.com/patfire12345/prod_planner	Dec. 5, 2021
MakerRepo	https://makerepo.com/ekoro061/1026.peak-productivity-a3	Dec. 5, 2021
Video Pitch	Peak Productivity - A3 MakerRepo (makerepo.com)	Dec. 5, 2021