Milestone 4

Version 1.0

Mental Health App

By:

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1. **Team Information**

1.1 Names and Emails of Project Members

- Daniel Bornemann - dbornemann2018@my.fit.edu
- Joshua Breininger - jbreininger2018@my.fit.edu
- Phi Duong - pduong2018@my.ft.edu

1.2 Faculty Advisor

- Dr. Bernhard - pbernhar@cs.fit.edu

1.3. Client

- Calvin Schwartz
- Maya Lindseth

2. **Project Details**

2.1 Progress of Milestone 4

Task	Josh	Phi	Daniel	To Do
Create graphical assets for the app to use.	50%	0%	10%	40% Need to continue making and implementing assets.
Implement the graphical elements/theme to the app corresponding to one month.	50%	0%	50%	Just need more assets otherwise this is set up and implemented.

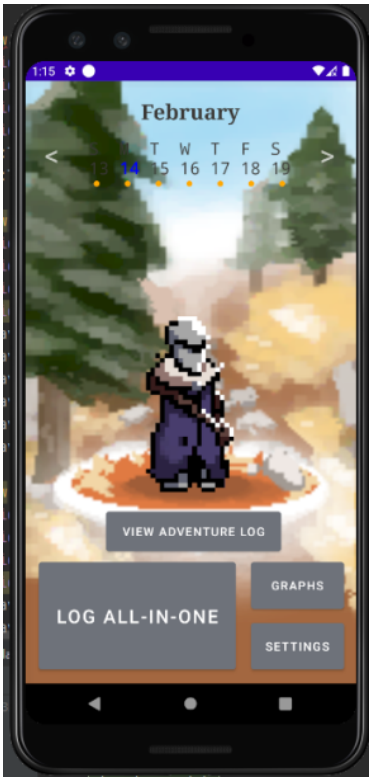
Create notifications based on previously planned database/SQL queries and information.	10%	10%	30%	50% Notifications still need to recall information from the database.
Complete storing information in the database through pop ups and obtaining it in graphs.	10%	10%	30%	50% Add graphs for other metrics of time and examined variables (diet, exercise, etc).
Create a dummy scenario generator and make an example game screen generated from stored images as well as a dummy scenario text.	25%	0%	25%	50% Need to complete the generator to grab variable file names.
ADDED TASK Create a calendar where the user can look at specific dates to see what information was stored on that date	10%	60%	10%	20% Need to move output of the calendar out of the adventure log and into pop

- which is also important for testing.				ups upon selecting days.

2.2 Discussion of Milestone 4

Task 1: Create graphical assets for the app to use.

We created graphical assets to match the general style that we want with the app. Currently we have a limited amount due to the time requirement of the milestone and lengthy process of making assets that look good enough to use. There also were some variable issues we encountered making them fit and match with the pop up buttons and general UI that we will continue to check and refine, as creating a cohesive app graphical theme that flows with its functionality is important. We also had to decide between using an assets folder or placing the images in the raw folder, as this impacts how we call them. It appears that assets folders do not work well with using xml like we have been, so for the majority of assets we will be using the raw folder.



Task 2: Implement the graphical elements/theme to the app corresponding to one month.

We completed this task with loading in custom assets using the raw folder with xml format, using elements specific to a certain theme. We have the ability to check the date on the device, so now we need to write the logic for using the month for deciding which background and assets to use. We are considering cutting down the number of themes to be 6, 1 for every 2 months to save space for saving the assets as well as the significant time it takes to make the assets. Although we could find free assets to use we want to maintain a specific aesthetic that remains consistent, which requires us to make our own.

Task 3: Create notifications based on previously planned database/SQL queries and information.

We managed to figure out how to create notifications and activate them on a button press. Our current notification is a test notification that appears when the app is started. Since implementing this took a decent amount of time to figure out, we will be pushing back the SQL query portion of this task to Milestone 5. The notifications will be triggered in the correct circumstances at the start of the app so once that logic is implemented the notifications will be complete as they already are in the right place. It is possible to create notifications that trigger when even not using the app, although we found this to be more obtrusive, and can be something we consider adding further down the line. Below is a link to the video of the notification being triggered and opened.

https://drive.google.com/file/d/1BIQ-c4i8bv0FKCNfbMykKk989t16XMAa/view

Task 4: Complete storing information in the database through pop ups and obtaining it in graphs.

Using MPAndroidChart we made our chart display now a bar graph rather than a pie chart. This bar graph obtains information using a select statement from the daytable in the database being the mood, over the last week of input. Currently it only has the functionality of showing the mood trends, and only over a week's time, although those features will just be an extension of what we already have. The foundations of the implementation is there and requires some more focus in the next milestone to make the final touches. The provided image of the graph uses the outdated GUI and the colors and theme will be changed to match the main menu GUI.

Task 5: Create a dummy scenario generator and make an example game screen generated from stored images as well as a dummy scenario text.

As discussed in previous tasks the raw folder with the assets has been set up and xml sections have been created to print relevant text to the scenario. Our challenge we encountered and are currently progressing on is that there are extra layers of string handlers that need to occur for the xml displaying the strings and images for the generator to be able to handle a variable for a file name rather than a direct file name, which was an unforeseen problem. It appears that we cannot simply place a variable to stand for the path of a file without having code devoted to the string and tagging the string for usage inside of the xml. From our research we know what we need to do to make this possible, and this should be done in the next milestone alongside the full generator.

Task 6 (ADDED): Create a calendar where the user can look at specific dates to see what information was stored on that date.

This task was originally planned for milestone 5, however we came to realize that being able to check a specific date to see what lies in the database for it was very important for testing to ensure our features were actually functioning and referencing the database properly. The inclusion of this task made us have to push back some parts of other tasks to the next milestone, however we believe this to be a better milestone plan and will make our development more efficient overall. This contains a calendar in the home page that cycles through the weeks and months, displaying dates corresponding to a real world calendar. Clicking on the arrows allows us to move through the days, and clicking on the calendar itself opens a large calendar displaying entire months, which we further can cycle through to view certain days. Currently clicking on a specific day sends the respective database information to the adventure log, which we have been using as a testing dump for database information. Below is a link to the video of the described calendar.

https://drive.google.com/file/d/1HxdtHb08eUktc_ZRBL64eQUKyLgMA3EN/view

2.3 Discussion of Team Contribution

- Joshua Breininger worked on the graphical assets, their implementation and the database..
- Daniel Bornemann worked on the notifications and helped with implementing the graphical assets.
- Phi Duong worked on the database, the calendar, and graphs.

2.4 Plan for Milestone 5

Task matrix for Milestone 5

Task	Josh	Phi	Daniel
Create poster and E-Book page for Senior Design Showcase.	60%	20%	20%
Finish making and implementing graphical assets and continue	60%	20%	20%

adding new monthly themes.			
Create a full scenario generator that checks if certain requirements are met to decide on a random scenario and correctly fetches graphical assets to match the scenario.	15%	35%	50%
Add some “achievements” based on logged information to allow for more possible scenarios.	30%	40%	30%
Research for any modifications to be made to notifications or logged information.	20%	40%	40%
Complete calendar that shows a day's logged information to the user.	33%	33%	33%
Finish deciding over a name for the app that properly expresses the desired usage.	33%	33%	33%

Finish the graph implementation	20%	60%	20%

2.4 Discussion for Milestone 5

1. The poster and E-Book submission is part of the required steps for this milestone, so our app needs to be complete enough to where all features are well represented for the showcase, which is the major function of this milestone.
2. We will complete the asset integration into the app - including icons to which the assets are nearly completed. We also need to complete 5 more overall themes to the app, which has been reduced from 12 total to be a change every 2 months. This is in response to the large amount of time it takes to develop assets, as we think the core features are more important at least for the showcase to be made. We also need to complete the variable integration into the xml folders to be able to make the theme change depending on the month and not just the hardcoded assets.
3. The full scenario generator will perform several checks to see what assets and scenario text it can use, which we will need to figure out a proper plan of how to connect relevant assets and text in an efficient manner. Our current idea is to have each asset to have an array of indexes that point to what scenario texts can be used with it, which we add to when certain conditions / achievements are met. Since there will be more text scenarios than variable assets, the assets should point to the information about the text scenarios rather than the opposite which would take up more space. We will look for feedback during the milestone 4 presentation for any ideas on other ways to accomplish this efficiently. We likely will need to have files devoted to giving achievements, assets and text labels similar to an operating system defining what certain operation codes mean to make obtaining them simpler to understand.
4. Adding achievements will be scattered throughout the code, as to have a variety of them including more “fun” achievements they will need to be checked and triggered by different functionality of the code. For example, checks for certain achievements being met will occur after the user logs information, or when the app launches for the first time in the day, or on clicking to certain resources. We also will need to have a large set of booleans devoted to whether or not an achievement has been met as well as an opcode for each achievement so that the scenario generator can reference them quickly, which will probably take its own file. These booleans will be called whenever an achievement is checked for to skip checking their conditions if the achievement has already been taken to increase efficiency of the program, and redundant code isn’t called. This

milestone's achievements will focus on logged information, to where we can branch out in the final milestone when we expand the game as much as we can with the time left.

5. We will need to conduct the same research we performed at the start of the project to see if any modifications to what is tracked needs to occur. If there are any new studies on how diet or exercise can contribute to poor mood or mental health we will want to reference them to see if we should collect different or modified information. We likely will use google scholar mostly for this search.
6. We need to finish the calendar discussed in Task 6 of milestone 4, which should be fairly quick as most of its functionality has already been achieved. We just need to open a pop up when a certain day is selected, which we can do with xml's like we have been doing for the rest of the UI rather than dumping in the adventure log. We also will need to have the xml print information from a variable which we have mentioned throughout the progress evaluation, which is an important step and the top priority starting milestone 5.
7. We need to decide on a name for the app that properly conveys what we want to accomplish with the app. The name should not be very formal or lengthy to be approachable, and needs to convey the scope of the project as well, not portraying the app to be some kind of cure for mental health or a replacement to health professionals.
8. Lastly we need to finish up the graphs in the app. Since we already have the database set up and a basic graph displaying mood over a week's time taking information from the database, finishing the graphs should be fairly simple. We just need to allow the user to look at the same graph with different metrics of time, using average mood, food and so on rather than specific day values like in the Week graph we currently have. Allowing for exercise and diet graphs is just changing the selected value from the database, to where we then need to tweak the visuals of the graph to match the rest of the app. Being able to overlap graphs is possible with MPAndroidChart so the user can view diet, exercise and mood graphs all in one to see any trends.

2.5 Dates of Meetings with Clients

1. February 4th, 2022
2. February 13th, 2022

2.6 Client Feedback

- The app is starting to look better, however, they would like to see a slight overhaul on the interface and an icon for the app.
- Pop ups/buttons should have some kind of texture as they look too jarring as of now.

2.7 Dates of Meetings with Faculty Advisor

- February 14th, 2022 - Email sending documents and progress report for feedback.

2.8 Faculty Advisor Feedback

Faculty Advisor Signature: _____ Date: _____

Evaluation by Faculty Advisor

Faculty Advisor: detach and return this page to Dr. Chan (HC 214) or email the scores to pkc@cs.fit.edu

Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Joshua Breininger	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Daniel Bornemann	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Phi Duong	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

Faculty Advisor Signature: _____ Date: _____