

# Assignment M1, Health and Fitness Dashboard

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## Abstract

Introducing a health/fitness dashboard for Apple's health monitoring and fitness application to track various human health focused activities including workouts, outdoors, sleep, eating, sitting, breathing and vitals including glucose, blood pressure, BMI, ECG, pulse rate, heartrate, respiration, mindfulness and mental health. Enhanced Dashboard will help to view customized feed on different spectrum of users in one touch based on factors including age, fitness levels, medical conditions, help users to feel comfortable, confident and motivating to focus on their health and fitness, an ease-of-use interface, guided tutorials, additional health resources, customized nutrition plan

## Problem Space

Apple's health monitoring and fitness application is extensively used by various people across demographic, it has outstanding features health, fitness and well-being of an individual. However, there are certain limitations in the current interface which might restrict a good percentage of users to ignore features or the application from using effectively. Health monitoring gets integrated with fitness application, on the home screen it shows favorites, highlights, steps, duplicated health id whereas the amount of data that's been collected through various sources is enormous, starting from smart watch, integrated third party applications, Apple's in house applications. Does the user get enough in return on health and fitness metrics is a big question mark?

Starting from age 12 smart watch is being used and data is collected to the system (there are age restrictions on certain features, example, only ages 22 and older can perform ECG with smart watch, parental locks on some health features), but the interface that shows the metrics is not user-friendly or it doesn't show the required metrics, health and fitness information customized to different needs and age groups who are health conscious. A user should have expert knowledge or get familiarized spending hours of time in understanding the application as there are huge number of options to navigate, this is overwhelming and may lead to over

usage and psychologically create panic or anxiety by seeing too much health data combined with stressful navigation

## **User Types**

In today's world most people are health and fitness conscious, health and fitness monitoring application are a great resource and used by diverse age groups across demographic, gender, race or ethnicity. The need for a customized dashboard is inevitable because it would motivate them to keep up on their goals, tasks and needs, types could include

- users who are physically active doing intense to moderate or low-level sport activities, fitness experts, professional athletes or sportsman likes to monitor their activity, speed and agility, pulse rate
- users who want to keep-up with their medical conditions tracking glucose level, blood pressure, cardio fitness, oxygen reading, controlling stress levels, respiratory functioning, nutrition and diet
- users who do manual labor includes construction, industries, logistics likes to keep track of their steps as workouts and their vitals stable
- users who may have disabilities, may not or could not be physically active have to be conscious on their nutrition and stay on their BMI with diet
- users who are kids likes to monitor their steps, eye health due to screen time, control their anxiety by mindfulness, fun personal records
- users who might have mental illness wants to keep track on their yoga, meditation, calmness, breathing exercises, stress levels
- users who like to read about health tips, dieting information, adding nutritional logs and keep track on their routines
- users who like to have all their health report under one roof wants to bring them to the application and monitor their trends and improvements less frequently

The most common feature that users would be looking out for in a dashboard is monitoring their vitals and then subsequently their customized needs. These would cover a wide spectrum of users assuming they are health conscious and would like to monitor it through an interface effectively. For achieving this, Natrualistic and Participant Observation, Surveys and Evaluation from existing interfaces using Product Reviews

## Needfinding Plan 1, Naturalistic and Participant Observation

Since this is going to make an interface better with dashboards on Apple's health and fitness monitoring, from the Naturalistic Observation point of view, following people, traveling outside, strolling around, watching news, understanding health contexts and how its features can help different groups of users. Here the important factor is not to fall into biasing mostly confirmation biasing, planning for different kind of users, anticipate their tasks, subtasks, goals and start the field work with broad minded can help to layout requirements unbiased. User groups defined here would fit in one of the categories, irrespective of their demographic presence. Below are some of the users, their goals, contexts of the tasks, subtasks

- Visit a construction site, watch the construction workers (*users*) involved in heavy manual labor in moving construction materials, build a house or commercial place, plumbing, electrical, concrete (*tasks*) and they like to stay healthy (*goals*), dashboard helps passively monitor their physical activity progress, mobility, respiration patterns, stairs climbing, SOS alerts on health pattern distress, ear health due to noise levels, aware of safety measures before starting a job (*needs*)
- Visit a gym, cross-fit training, recreation park, watch fitness enthusiasts or professional athletes in media (*users*) who are doing workout, running, walking, cycling, trekking, playing random sports (*tasks*), they like to keep track of their physical routines in a dashboard (*goals*) like a runner can have miles ran, average pace, calories burnt, speed per mile and other statistics (*needs*)
- Visit a store, watch store employees (*users*) walk around the stores, organize things, climb up ladder, wipe floors, move items (sometimes heavy, *tasks*), like to monitor their health patterns, logging nutrition, water intake, their risk of collapses are narrow in this use case. The dashboard would show steps walked, stairs climbed, nutrition information (*needs*)
- Visit a senior community or hospital, watch people who try to recover back from their illness or medical conditions (broadly), anticipate some of the tasks they would do and their goals on health, they would have low physical activity and dashboards showing more vitals, symptoms, nutrition or any more detailing on allergies could be extremely important

- Visit a corporate office like banks, IT, where people work on computers (*users*) while sitting idle on a place with compelled low physical activity, need to be mindful about their stretches, walking, eye exercises, water intake, breathing exercises, mental health (*tasks*) can be show on dashboard while monitoring them and being mindful (*goals*) won't take a toll on their health conditions in the future (needs)
- Stroll around to observe how many are using their headphones, how listening through headphones could cause potential damage to their ear drums, cause infections, how dashboard alerts can prevent them from such health issues or users starring at screens (mobiles, computers, tv) for longer time, dashboard can alert or restrict (kids) them to be mindful about their eye health, blinking exercises
- Observe and anticipate tasks for people with disabilities who might need immediate assistance during emergencies, dashboards can work customized based on the need, for example, users with vision disabilities can enable voice recognition, users with walking disabilities can enable fall risk protocol to reach assistance,

Remember, the basic vitals including heart rates, oxygen reading, glucose, blood pressure, respiratory, sleeping are common among user types, but their needs or frequencies might vary based on individual health conditions or age groups.

### **Needfinding Plan 2, Surveys**

Dashboard interface on health and fitness monitoring could be done through survey questions, this would target additional set of user groups who were not covered as part of the naturalistic observation and provide more inputs or requirements from individuals throughout process which could vary on different age groups. Observer bias may be encountered while framing survey questions, this can be mitigated by adding more open-ended questions wherever needed (maked it *unbiased*), expressive on the questions related to health by having multiple options

Surveys can be done over internet or reach out to random people in person with a list of questions, which could be time consuming, but this can help target kids using smart watches to track their fitness and they can answer in front of their parents with their consent.

The goal for this survey is to bring a customized dashboard interface, that can serve various spectrum of users effectively, there are bunch of data that are collected or can be uploaded to the application, and it is huge or complex to understand and not efficiently used as of today. So, start the survey with identifying age group, genders, occupation, these questions are to categorize the users into groups, there is no biasing here as questions would be broadly classified or open-ended

Next set of questions, is gather feedback about the existing interface, how satisfied are they with the interface, how frequently it is used, nutrition or water intake tracking, following alerts or notifications from application, open-ended on what part of the application are mostly used, flexibility in providing health data, frame questions based on key features used like vitals, physical activity, cardio health

Now pitch in an idea of bringing in a dashboard interface to keep track of health and fitness monitoring with survey questions, these could be specific targeted or double barrel questions like default unchanged vitals widgets vs customized vitals widget, fitness tracking widget to include outdoor activities, additional vitals widget, numbers vs charts, history of records, personal achievements, mental health features, care for everyday routines like eyes, ears and teeth, voice recognition for disabled, tips on staying healthy and targeted tutorials based on health conditions.

Women's health focused questions to include needs for moms on breastfeeding, nutrition, mental health awareness. Kid's health focused questions on memory, sporting, anxiety, eye and ear health. These are wide variety of questions and greatly dealt with sensitive health or medical conditions, and they should be formed clear, unbiased and be open-ended which could get a great data inventory

Some questions that could lead surveyors to biasing, cornering or pre-conceived notions are thinking youngsters are physically active, elderly are less active or certainly having medical conditions, kids are anxious all the time, judging users based on age, gender or occupation group, ignoring disability users while designing interface. To gain trust on users, surveyors should not be narrow-minded, whatever questions could feel uncomfortable, a note can be added why those questions are asked or questions can be framed pleasantly and make survey a good experience. Always remember, survey questions are data points on how to

make interface better to serve the users and not to target them with unnecessary questions

### **Needfinding Plan 3, Evaluation using existing user interfaces**

Evaluating existing user interface or application with similar interface would be a great way of needfinding and help in getting the dashboard better. This evaluation can be done after designing a prototype from previous needfinding exercises like survey or naturalistic observation, this process is an example of iterative needfinding. In today's world, there are application or interfaces for almost anything that comes to mind. Health and fitness are a widely focused phenomenon and there are ample number of applications to evaluate and get inspired from, exceptional features can be integrated through handshake with those interfaces or design a similar one into current Apple's interface.

Confirmation and Voluntary response biasing might occur due to pre-conceived notion that the other interface is good or bad based on application reviews and designer tend to copy it, this could be mitigated by focusing on the objective of new interface, its goals from user perspective through the data inventory collected and focus on the templates or process followed with respect to current interface, enrich or emphasize the need on how to make the dashboard interface more user friendly

First, the current Apple's health and fitness can be evaluated to understand what features benefit the user and what are missing, why the user goes to try other application. Once the connection of trust, usability is established with the user, they rarely tend to switch application because of the knowledge curve that switching an application would bring. So before evaluating or analyzing other application interface, lets do *gulfexercising* to understand how the current interface can be made better with feedback cycles on intentions, identify actions, execute interface, perceive and interpret output and finally evaluate them

Adding nutritional logs, water intake, everyday dieting logs are complex or not efficient in the current application as they needed to be added manually, tied up with third party applications, these should be added through voice controls and be in real-time to keep track of the diet based on other vital readings. Example, announce to add 2 wheat breads for breakfast to nutrition, webmd application can

provide nutrition information for it, and it can be retrieved and added to nutrition logs, this dieting information could help on core vitals stability

Remote patient monitoring could be useful for people with disabilities or elderly with medical conditions who would need frequent monitoring, this could be added to the dashboard with a telehealth professional monitoring and provide medical or moral support whenever required

Fitness tracking for outdoor activities like running, walking, cycling is efficient in certain application vs Apple's in house application for fitness, this could be tracked in-house rather than gathering data from third party application and avoid user to through the pain of downloading the other app, setting up account and get familiarized with the interface, the same kind of challenges goes for body building workouts

Integrating mental health using interfaces from happify can help monitor stress levels, increase positivity, this is something the current Apple interface is lagging and could be great addition to target users who are anxious, depressed and want to fight back for a positive life, adding yoga and meditation features to their dashboard could be nice features

The purpose of this dashboard is to track everything under one roof in a customized view and avoid hassle of moving between application, so the interface could go iterations of needfinding until the gulf can be narrowed with follow-ups after the implementation are complete and do a needfinding strategy of post-event protocol or think-aloud or errors which seems to be obvious strategies to look for in this use-case of designing a dashboard interface. The new interface look would be something like the design in *Appendix: Health/Fitness Dashboard*

## References

- <https://www.apple.com/ios/health/>
- <https://www.apple.com/apple-fitness-plus/>

## Appendix

Appendix: Health/Fitness Dashboard

