A User-Centred Design Approach to Data Visualizations

Participant Workbook

Phase I: Research

User interview questions

1. Tell me a little about you (e.g. occupation, education, family, hobbies, etc.).
2. **What** aspect(s) of a healthy lifestyle would you like to monitor?
3. **Why** is this important to you?
4. **When** would you use this information?
5. **Where** would you use this information?
6. Do you monitor this information currently (digitally or non-digitally)? If so, **how** do you monitor this information? What do you like and dislike about it? Do you encounter any challenges?

User interview notes

1. Username: Pavan Sanjay There
   Occupation: Coating specialist in Kuntz Electroplating Inc.
   Education: MBA and recently completed Project Management certification
   Family: Lives alone in Canada, Family lives in India.
   Hobbies: Interested in sports especially in Cricket and Table Tennis.

2. Interested in Monitoring two aspects:
   Losing Weight by exercising regularly
   Tracking my nutritional intake

3. The user has to work 12 hours a day for 4 days a week (4 days off) and maintaining a healthy lifestyle plays a vital role in increasing productivity and reducing stress. Regular exercise will also help to be healthy in the long run.

4. This information can be used to track daily activities and eating habits and set weekly health goals. This can help especially during their 4 days week off when user wants to focus on themself.

5. This information can be used daily at home, at work, while doing physical activities and exercises and while planning meals.

6. Currently monitoring a few aspects on digital apps like Apple Watch, and Health app from iPhone but not consistent tracking.
   Likes the health trends shown in the app and dislikes the limitations of easy health tracking on the app.
   Faces challenges in lack of consistency in tracking data and too much manual work to set up data on the app.

Phase I: Research

User interview synthesis

1. Who is the user?

The user is Pavan Sanjay There, a Coating specialist at Kuntz Electronics. They are employed for four consecutive days each week, with each workday extending to 12 hours. Following this period of work, they are afforded four days off. They are interested in being fit by exercising and losing weight while tracking their nutritional intake. They want to specifically focus on the 4 days off period to work on their health

2. Where should our product fit in their work or life?

The product should fit into the user's daily routine helping him manage his health during long work hours. It should specifically be useful during the user's day off when they focus on themselves by working out and tracking their nutritional intake.

3. What problems should our product solve?

The product should resolve four main challenges:

- Inconsistent tracking due to a busy work schedule
- Manual data entry/ inputs
- Easy to use health tracking features
- Personalized actionable health insights

4. When and how should our product be used?

The Product should be used daily by the user both during work hours as well as at home to monitor physical activities, plan meals and track weight. The product should focus more on the week-off days of the user to attain his health goals. It must be used while preparing meals to track nutrition and during workouts, sports and physical activities to monitor progress. It can be integrated into daily life to help the user manage productivity through regular exercise.

Phase I: Research

5. What features are important to our user?

    - Automatic tracking with negligible manual inputs
    - Syncing with current devices like Apple watch, iPhone health app and integrating with Mac book and iPad if needed.
    - Weekly, Monthly and Yearly Health trend analysis that provides clear goals for weight loss, meal planning and fitness progress.
    - Customizable insights for exercise, nutritional meals and fit check to meet long-term goals.

6. How should our product look and behave?

    - The product should have a user-friendly interface with a clean and crisp design.
    - It should have minimal manual input with automatically synced and tracked data.
    - It must provide timely reminders that help the user to stay consistent with the goals without feeling burdened.
    - It should suggest personal recommendations for physical activities, nutritional meals, sleep schedule and water intake.
    - Our product should perfectly fit into the user's busy work life and act as a support tool.

Source: Gothelf, J., Seiden, J. (2016) *Lean UX: Designing Great Products with Agile Teams*. Sebastopol, CA: O'Reilly Media, Inc.

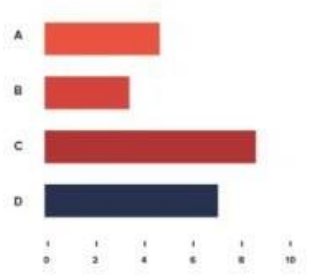
Phase II: Wireframe

Types of charts by function

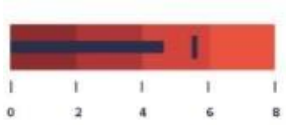
https://datavizproject.com/

Make comparisons

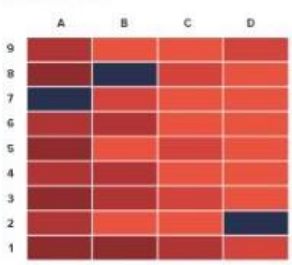
Horizontal/vertical bar



Bullet

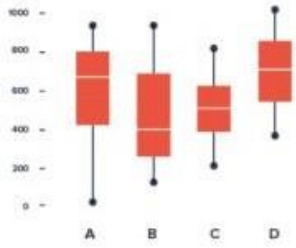


Heatmap

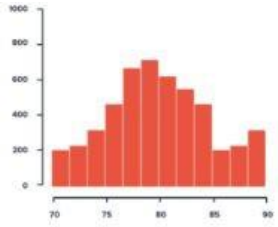


See distributions

Box and whisker

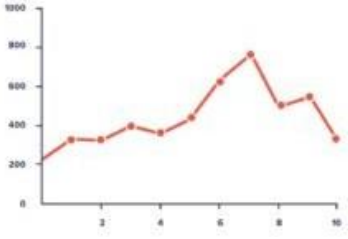


Histogram

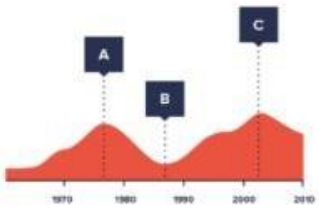


Spot trends over time

Line

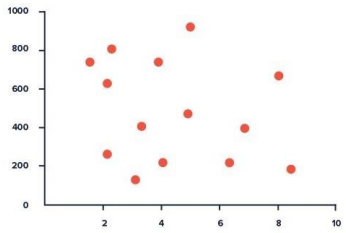


Area

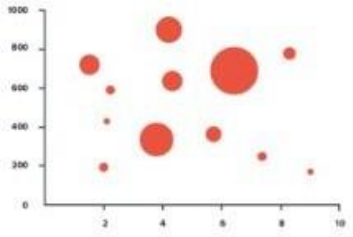


Understand relationships

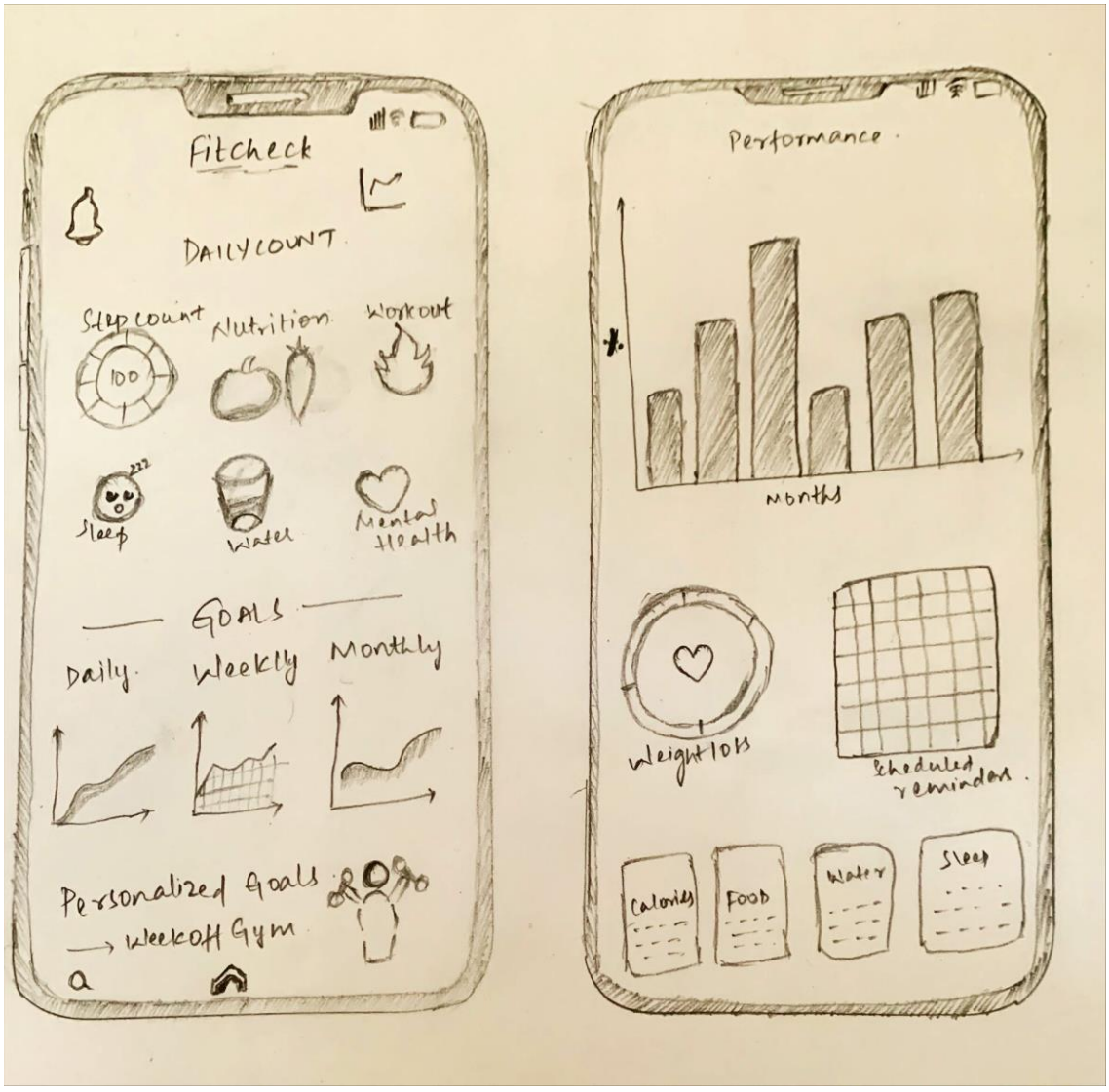
Scatterplot



Bubble



Use the space below to draw your wireframe, or use othersheets of paper provided.



Phase II: Wireframe

User feedback

(+) Likes	(-) Dislikes
Design is easily understandable. Daily count icons and personalized Goals setup is helpful.	Do not prefer pie and donut charts for weight loss tracking.
(?) Questions	(!) Suggestions
Is there syncing available with other apps? Can i select the background colour?	May have Weekdays and Week off health trends separately as the user has rotational offs not fixed. Prefer line or bar graph for weight loss trend

Phase III: Prototype

Usability Test Template

Describe the task(s) you wish to test:

Reflect on your user's goals and key activities. For example, a goal of the user may be to do more bench presses every week. Can they use your dashboard to:

1. See if they are improving each week;
2. See how much they are improving each week;
3. See how close they are to achieving their goal.

- Personalized Goals
  Track progress towards personalized goals so that the user can review them. For example, going to the gym every day during the week off days, burning extra calories and having nutritious meals. They could let the app sync with other fitness apps to update the log activities section automatically.

- Weight Loss Graph
  Monitoring weight loss promptly. The user can view the graph to see the specific months where weight loss occurred faster or slower and the minimum and maximum weight they lost at specific times.

Read this introductory script to your test participant:

Hello {Name of the participant}, thank you for coming. My name is {your name} and I'm the designer of this health and wellness dashboard. I'm going to walk you through the session today.

Before we'll start I have some information for you.

We're currently testing this product to learn as much as we can about the way people use it. Every product is intended to work in a certain way by its creators, but as you know – the reality might be quite different. The goal of this research is to get us as close to the reality as possible.

The session will take about an hour.

Please remember, during the next hour, that we're testing this product, and not you. Don't worry at all about mistakes. If they happen, it's the fault of the product. Finding about it is absolutely fantastic and gets us closer to creating a great product.

During the whole test, please try to think out loud. Share anything that's in your head. Tell me what you are looking at on the screen, what your thoughts are, what you like and what don't you like, et cetera. We want to learn about your honest reactions to this health and wellness dashboard.

Do you have any questions before we begin?

Source: https://www.uxpin.com/usability-test-kit

Phase III: Prototype

Usability test questions:

Walk me through how you would use this dashboard to **[describe task]**.

Note: If you have more than one task you wish to test, test one task at a time.

Probes:

- Why did you look there?
- What design element gave you that answer?
- How did you decide to do that?

Notes:

Explain how you would track your personalized goals in a day or a week.

- Why did you navigate to this area to check your goals?
- What helped you understand you are on the right track to completing goals?
- How would you check weekdays and week-off goals?

Explain how you would understand the weight loss graph.

- Which part of the graph would you first check?
- How did you understand your journey from this view?
- Why did you zoom in on that specific part of the graph?
- How would you explore this graph in detail?

Describe how would you use the daily count icons to input or track data.

- How would you track your daily nutritional and water intake?
- Which element made you track the daily counts?
- How would you update the data in the icons?

Phase III: Prototype

Usability Test Analysis

Critical issues:

Issues that prevented users from completing the task, and caused significant levels of frustration.

Performance trends tracking for weekdays and week offs within one graph is causing the user difficulty in toggling and filtering the data. This can cause them to track the information ineffectively and could lead to frustration when used long-term.

Major issues:

Issues that prevented users from completing the task properly/accurately and caused moderate levels of frustration.

The user faced an issue zooming into specific periods in the weight loss graph. This would create a barrier to view exact numbers

Minor issues:

Users were able to complete the task properly, but with some frustration and confusion.

There is no separate icon for checking trends easily. This would lead the user to tap multiple times which may cause inconvenience.

Phase III: Prototype

Your design recommendations:

- Improve toggling clarity for switching between day/week/month performance trends view or give separate trends.
- Change the graph of weight loss and enhance the view.
- Create a separate icon for easily accessing all trend graphs.

Dashboard Prototype: