

Fitmate

A Step Forward in Diabetes Awareness Among College Students

Empowering Healthier Lifestyles through Human-Centered Design

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Fitmate: Fostering Diabetes Awareness in College Life



Problem

Lack of awareness and practical tools for college students to manage and prevent Type 2 diabetes.



Solution

Developed "Fitmate," a mobile application tailored to educate and engage students in healthy lifestyle choices to mitigate diabetes risk.



Method

Employed user interviews, observational studies, and surveys to understand students' lifestyle habits, knowledge, and attitudes towards diabetes.

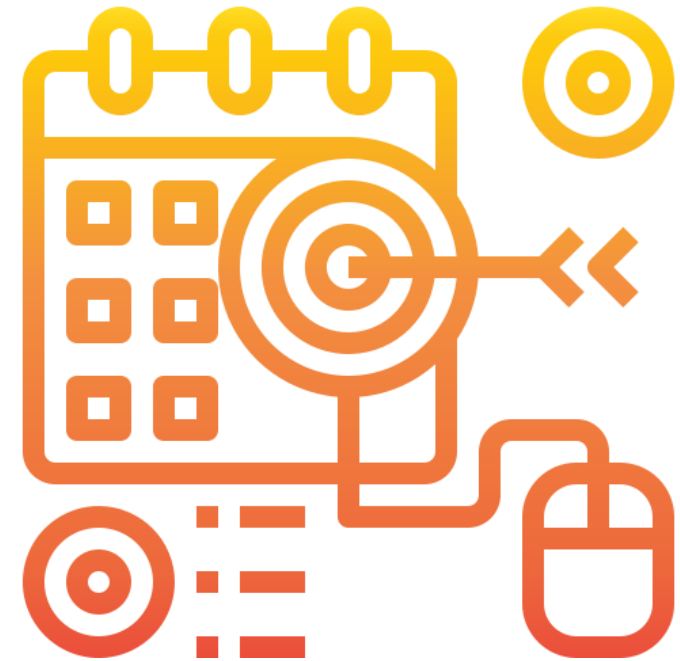


Result

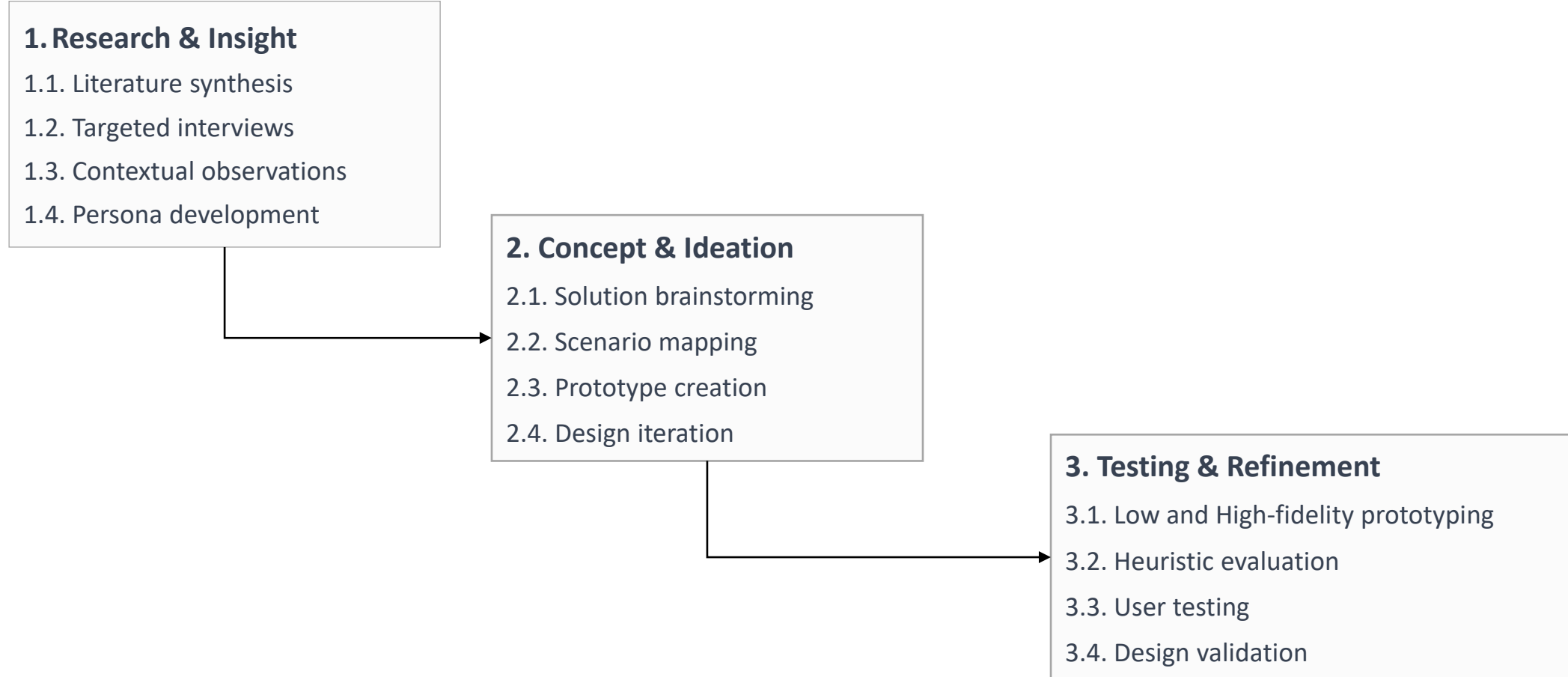
"Fitmate" enhances students' diabetes knowledge, promotes physical activity, and facilitates healthier eating habits, as indicated by positive user feedback and usability studies.

Project Motivation

- The rising prevalence of **type 2 diabetes** and other preventable diseases like **obesity** among young adults is alarming. Research shows that these diseases share common risk factors, such as poor diet and lack of physical activity, which can be mitigated through early awareness and education.
- Young adults, particularly college students, often lack knowledge about the long-term health risks associated with unhealthy habits like fast food consumption and inactivity. By focusing on **diabetes awareness**, we aim to equip students with practical tools and knowledge to make healthier lifestyle choices, reducing their risk of developing type 2 diabetes.



A Set of Design Activities



Literature Review

Literature Review

Diabetes: A Prevalent and Preventable Disease in the U.S.



Type 2 Diabetes affects over **37 million Americans** and accounts for **90-95%** of all diabetes cases (CDC, 2023).



The disease is closely linked to **obesity** and **lifestyle factors** like poor diet and lack of physical activity.

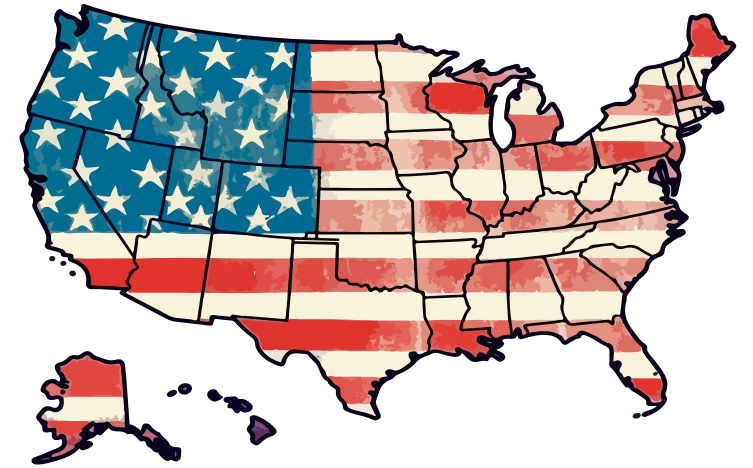


Young adults are increasingly at risk due to unhealthy eating habits and sedentary behaviors.

Literature Review

Type 2 Diabetes is the most common type worldwide.

Type 2 diabetes accounts for approximately 90% to 95% of all diagnosed cases of diabetes in the US; type 1 diabetes accounts for approximately 5-10% (CDC, 2023).



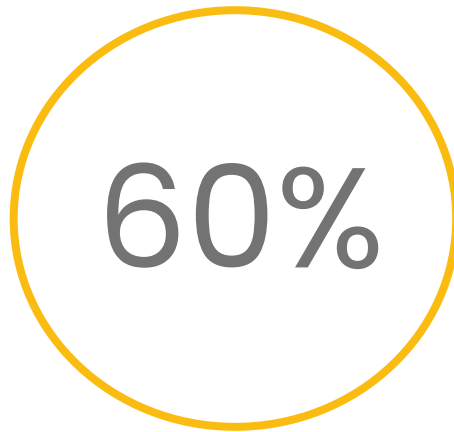
90%– 95%

Literature Review

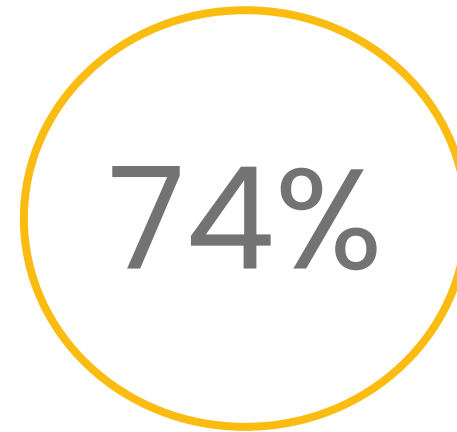
How many people are Aware of it?



Age group : 16-35



Age group: 35-54



Age group: 55-64

Type 2 diabetes most often develops in people over age 45,
but more and more [children, teens, and young adults](#) are also developing it (CDC, 2022b).

Literature Review

Addressing Sedentary Behaviors Among College Students



Modern college lifestyles often lead to reduced physical activity due to long hours of sitting for study and screen time. (Shah et al., 2022)



Telehealth services and digital health tools can enhance health management among students, helping them stay active and engaged in preventive health practices. (Sahoo et al., 2022)



Technological interventions, such as health apps and wearable devices, can promote physical activity and motivate students to adopt healthier habits. (Anurupa et al., 2019)



“

Preventing type 2 diabetes involves a healthy lifestyle: a balanced (healthy) diet, regular exercise, and avoiding sugary and processed foods.

”

(International Diabetes Federation).

Method

Method Overview

- Contextual Inquiry Observation
- Semi structured Interview



Observation Overview

Locations:

- Indiana University Campus Center – **Food Court**
- Indiana University Campus Center – **Gym**

Objective:

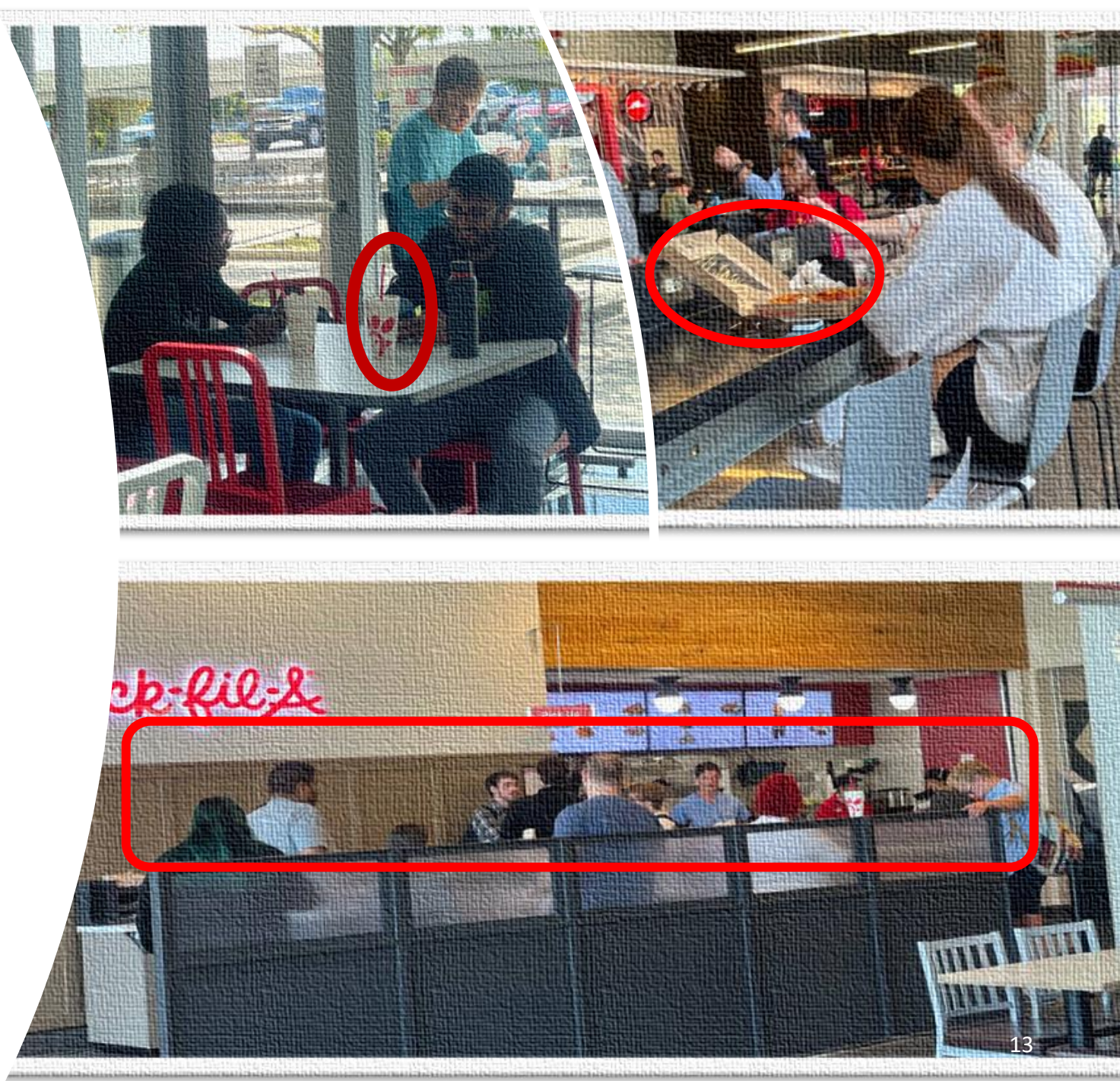
Observe student behaviors related to food consumption and physical activity to understand habits influencing diabetes risk.

Method:

Our team of 5 members spent **30-40 minutes** observing students in each location.

Focused on:

- Food choices and consumption habits in the food court.
- Exercise routines and behaviors in the gym.



Observation Insight

Food Court Findings:

- **Common food choices:** High consumption of fast food and sugary beverages.
- **Behavior:** Students preferred quick meals that are easy and affordable, often choosing processed and convenience foods.

Gym Findings:

- **Exercise habits:** Inconsistent exercise routines, with some students spending minimal time engaging in physical activities.



Methods: Interview

Participants:

- 10 students from Indiana University (ages 20-39).
- Recruitment method: **Convenience sampling**.

Interview Details:

- Focus: Awareness of diabetes and related lifestyle choices.
- Duration: **30-40 minutes** per interview.
- Data: **Qualitative**, analyzed through **deductive coding**.

Sample Questions:

- What do you know about diabetes, specifically type 2 diabetes?
- How would you describe your daily eating habits?
- What lifestyle changes do you think can reduce the risk of diabetes?
- Do you use any fitness or health-tracking apps to monitor your health?



Methods: Interview

Key Findings from Sample Interviews:

- Out of the **10 participants, 4 were aware of diabetes-related risks** but struggled to implement healthy routines.
- Participants who were aware of risk factors such as poor diet and lack of exercise but **struggles with maintaining a healthy lifestyle due to a busy schedule.**



Limitation

- **Convenience Sampling:**

Conducted at Indiana University Indianapolis, so findings may not represent students from other universities.

- **Limited Population:**

Only 10 participants, limiting the generalizability of the results.

- **Location-Specific:**

Data collected only at Indiana University, which may not reflect students' behaviors elsewhere.

- **Time Constraints:**

The short study duration (2 months) limited the depth of interviews and observations.



Problem Statement

Problem Space Overview



The following key problems were identified based on:

- ❖ **Secondary Research (Literature Review):**
Understanding general issues surrounding diabetes awareness, lifestyle habits, and health challenges in young adults.
- ❖ **Primary Research (Observation & Interviews):**
Insights gathered from observing student behavior and conducting interviews about diabetes awareness and lifestyle choices.

Problem Space

Limited Diabetes Awareness

Students lack comprehensive knowledge about type 2 diabetes and its risk factors, leading to a lack of preventive actions.

Supporting Interview Quotes:



P5: "I know it's a kind of disease related to **blood sugar levels**. There are different types of diabetes, some related to genetics and family history while others are linked to diet."



P7: "**I don't know much about diabetes**, but I know it's related to high blood sugar levels. I think it can be dangerous for the heart and brain."



P9: "I'm aware of diabetes from high school, but **I don't have extensive knowledge about how to prevent it**. I just know it's linked to unhealthy habits."



Problem Space

Hectic Lifestyles

Busy schedules and academic pressures often hinder students from maintaining regular exercise routines and balanced diets.

Supporting Interview Quotes:



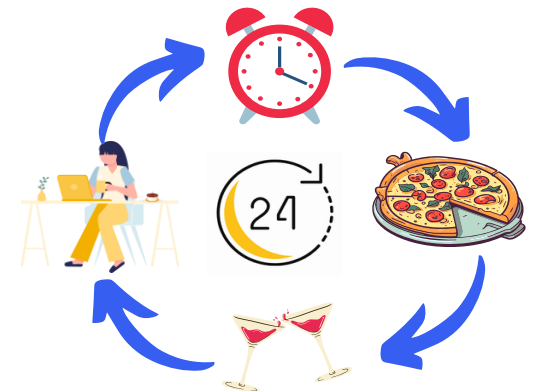
P9: "As a PhD student, my research keeps me **busy**. I often spend long hours in the lab, and this can lead to skipping the gym and opting for fast food."



P12: "The biggest challenge is **managing my time**. I do not get enough time to cook proper meals so I have started to batch cook now."



P10: "**My work hours are long** with a late start and a late finish. I end up going to bed several hours later than usual."



Problem Space

Unhealthy Dietary Choices

Fast food consumption, particularly sugary and processed foods, is prevalent due to convenience and affordability.

Supporting Interview Quotes:



P9: "As a PhD student, my research keeps me busy. I often spend long hours in the lab, and this can lead to skipping the gym and **opting for fast food.**"



P7: "Sometimes I resort to **frozen meals** and instead of boiling food, I fry it a lot because it's quick and fast."



P6: "I don't follow a very specific meal plan now. Ever since I've been here, I can't focus as much as I used to. I try not to consume more than 2500 calories, but when I'm busy, **I just go for fast food.**"



Problem Space

Need for a Partner

Students expressed a desire for connections within the campus community, including finding exercise partners

Supporting Interview Quotes:



P6: "I usually exercise alone, but I think **having a partner** would motivate me more to stay consistent with my routine."



P4: "I've seen people working out together, and I **wish I had someone to exercise** with, but it's hard to find people with the same schedule."



P9: "Sometimes I get lazy to go to the gym, but **if I had a friend to go with, I would be more regular.**"



Ideation



STUDENTS

College students' inability to maintain healthy habits and their lack of awareness about type 2 diabetes.

What?



DIABETES

To reduce risk of type 2 diabetes among students by promoting healthier lifestyles and empowering them with vital health knowledge.

Why?

Persona

- Based on interviews with 10 college students

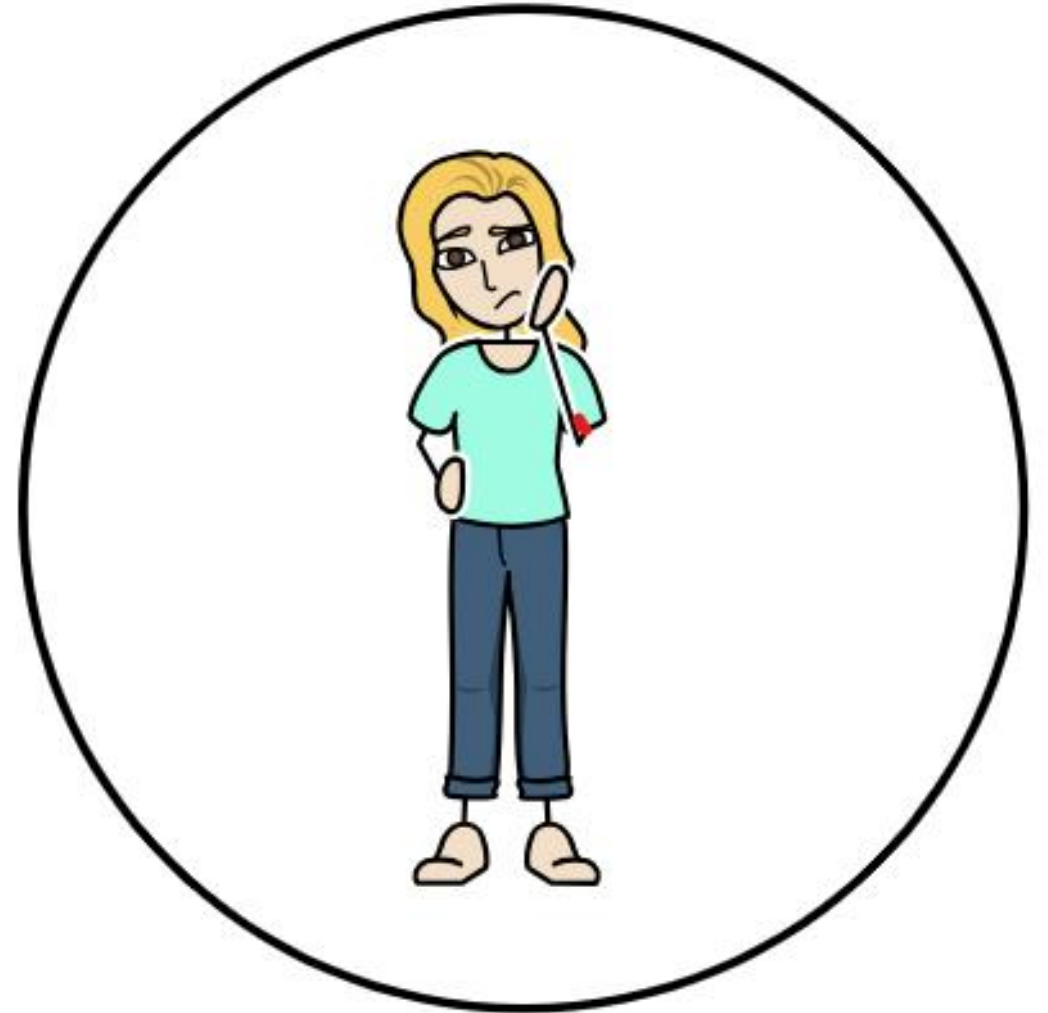
Meet Lydia Anna

22 years old, full-time student

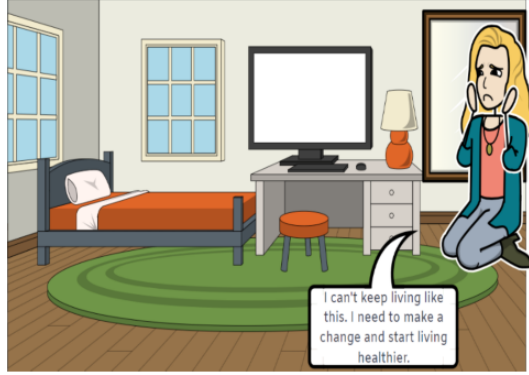
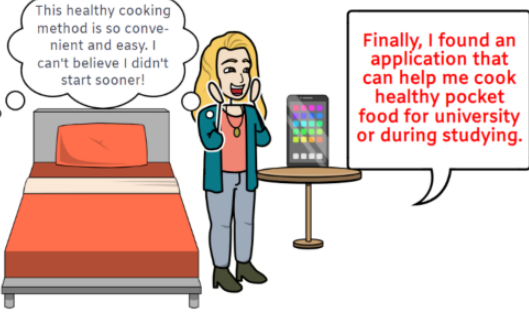
“I eat junk food and sleep late when I am stressful.”

“I want someone to exercise with me.”

“I feel depressed with my graduate study.”



Storyboard

		
1. Lydia, a 22-year-old student overwhelmed with coursework, neglecting her health.	2. One day, Lydia realizes she needs a change. She wants a healthy lifestyle but doesn't know where to start.	3. Lydia, in her quest for a solution to lead a healthier life, searched extensively for an app specifically tailored to help her achieve a balanced diet and cook nutritious meals.
		
4. Lydia, determined to find a way to lead a healthier life, discovered the Virtual Diabetes. She decided to give it a try, hoping it would be the answer she was looking for.	5. The application's bots answer her questions, provide diabetes-friendly recipes, and connect her with a partner for daily exercises and a friend for cooking sessions.	6. With the Virtual Diabetes Coach, Lydia regains control. She exercises, cooks nutritious meals, and most importantly, feels healthier and happier.

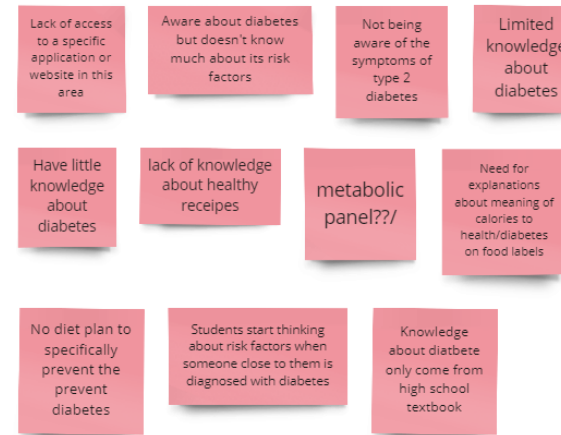
Analysis: Affinity Map

Sugar intake



Our findings

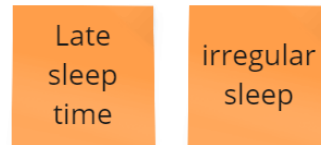
Awareness



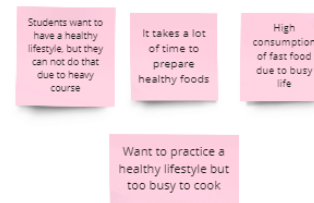
Food & drinks



Sleep



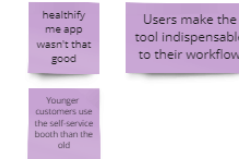
Time



Gym



Technology



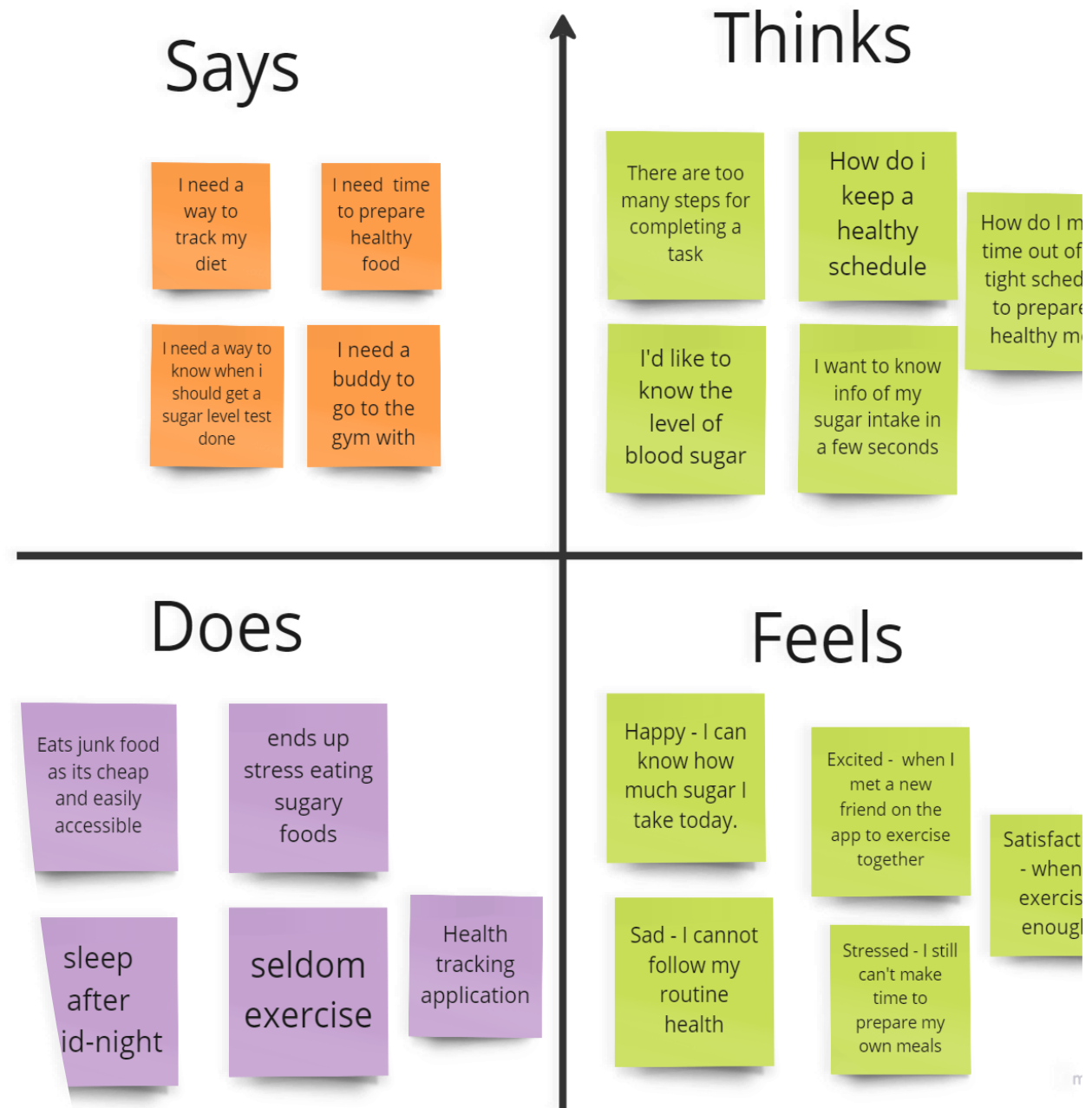
Money

Lack of fund makes it difficult to get healthy food

Smoke

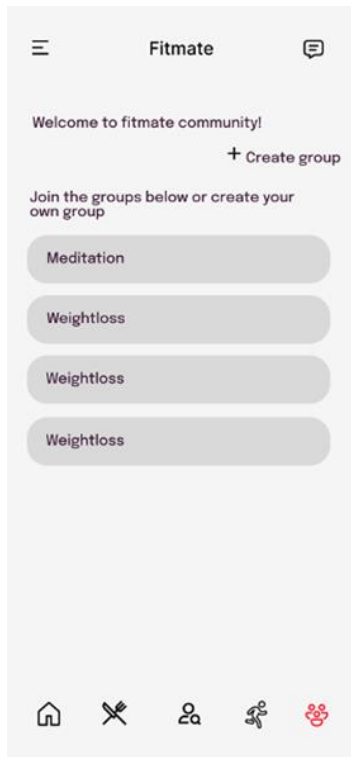
Increasing smoking among young people

Analysis: Empathy Map

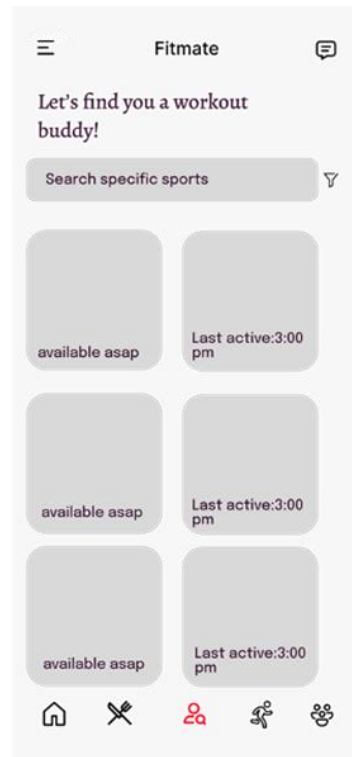


Prototyping

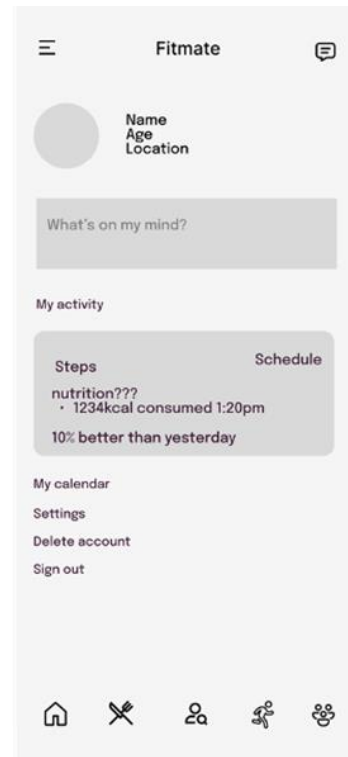
Low Fidelity Prototype



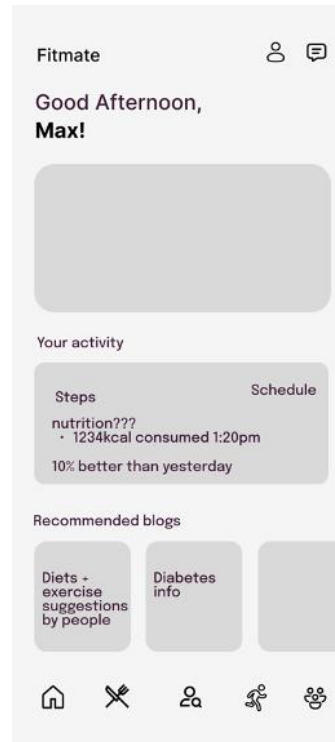
Home Page



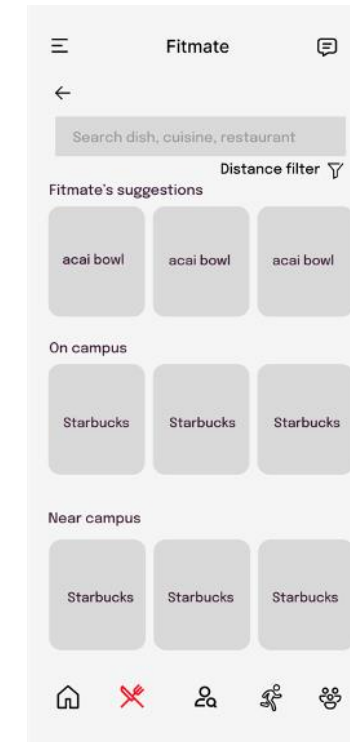
Dining



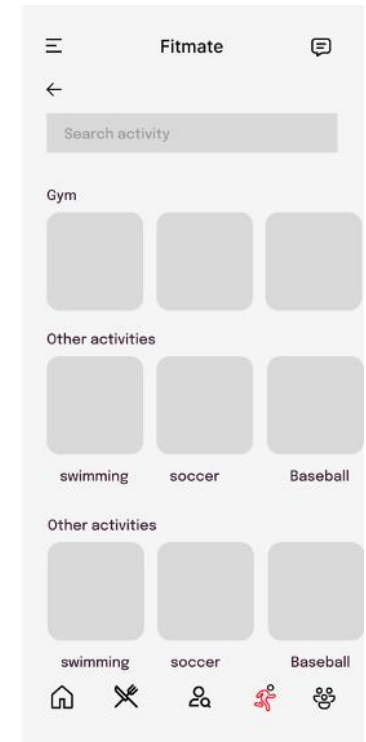
Activity



Community



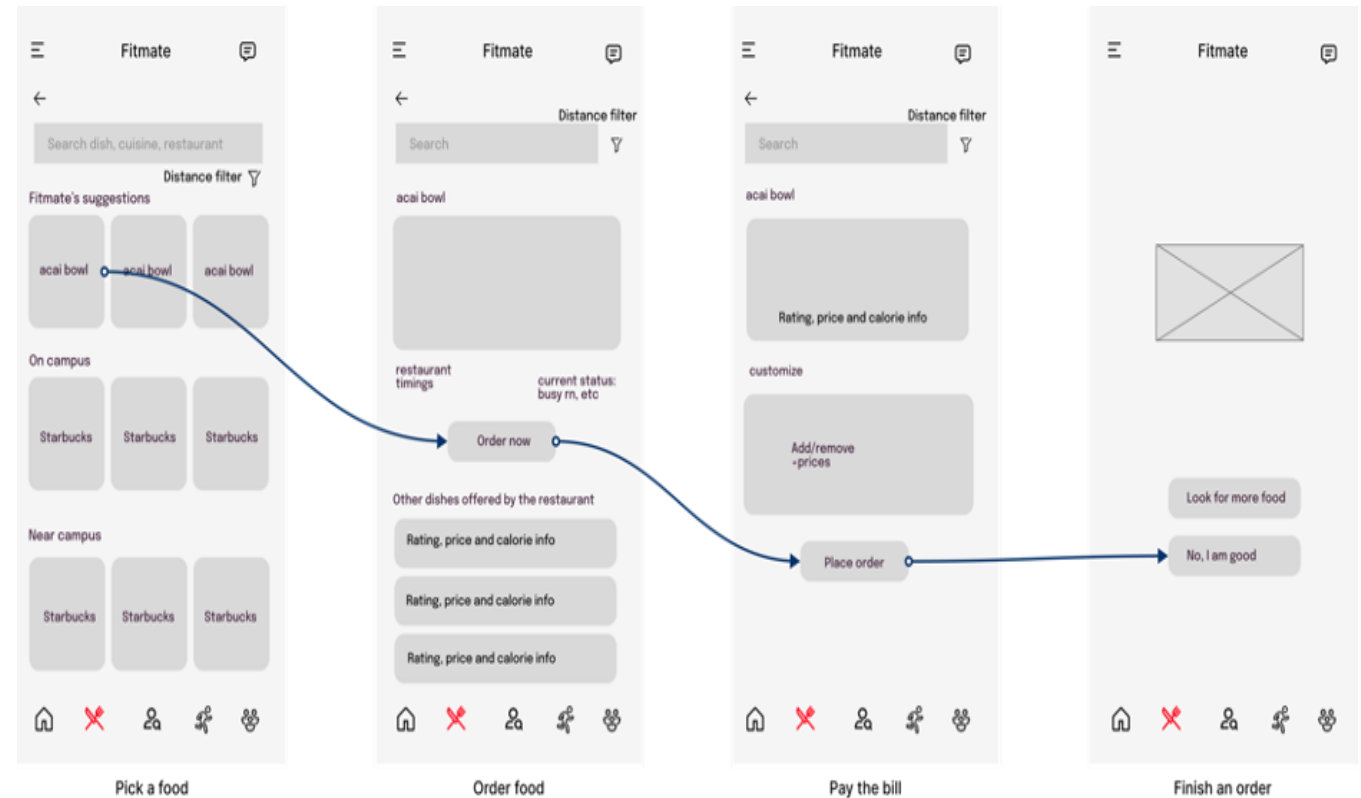
Finding partner



Profile

Low-Fidelity Wireframes

Dining Flow



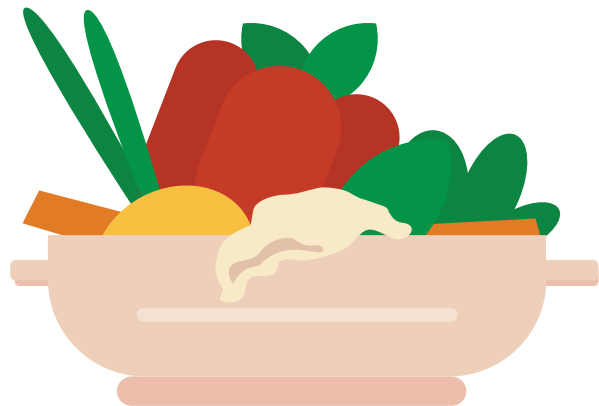
Low-Fidelity Wireframes

Find a Partner



Fitmate

Healthier Lives, Stronger Bonds.



Fitmate



Wellness app for college students



Addresses Type 2 diabetes prevention



Connects students for fitness activities



Guides healthy eating options

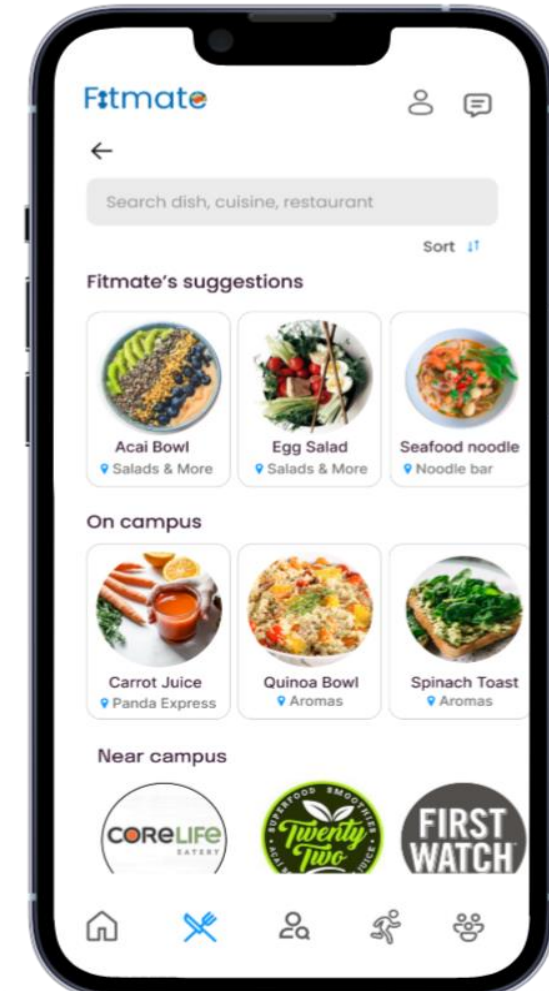
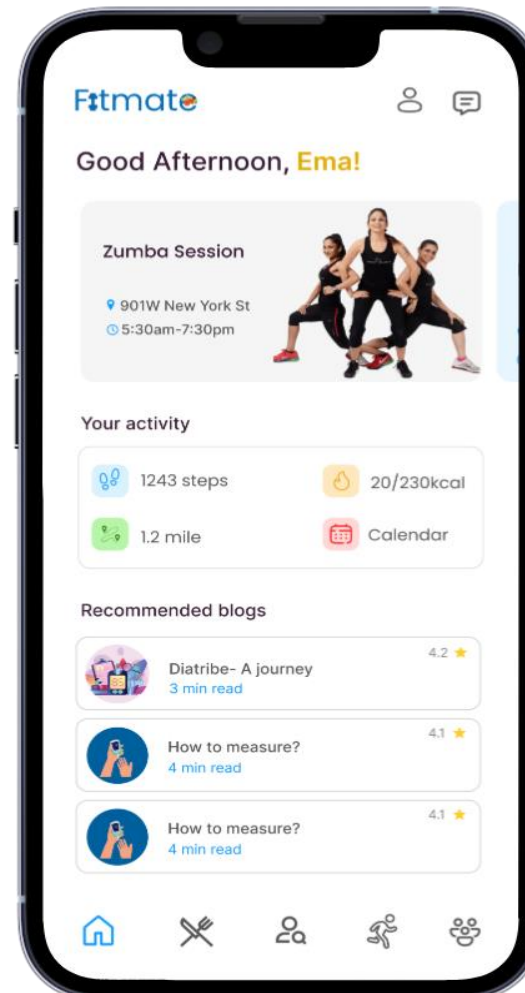


Builds community for health and well-being

Hi-Fidelity Prototype

Key Features

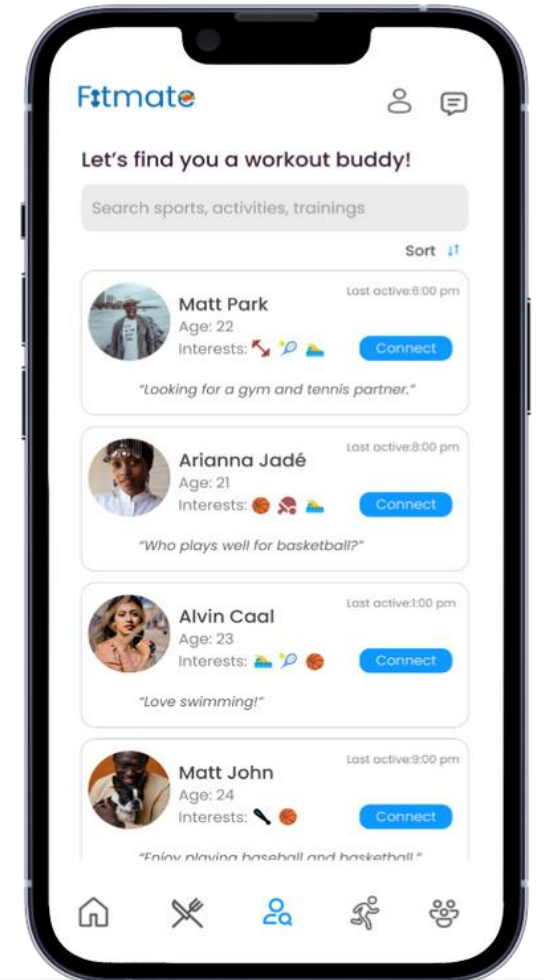
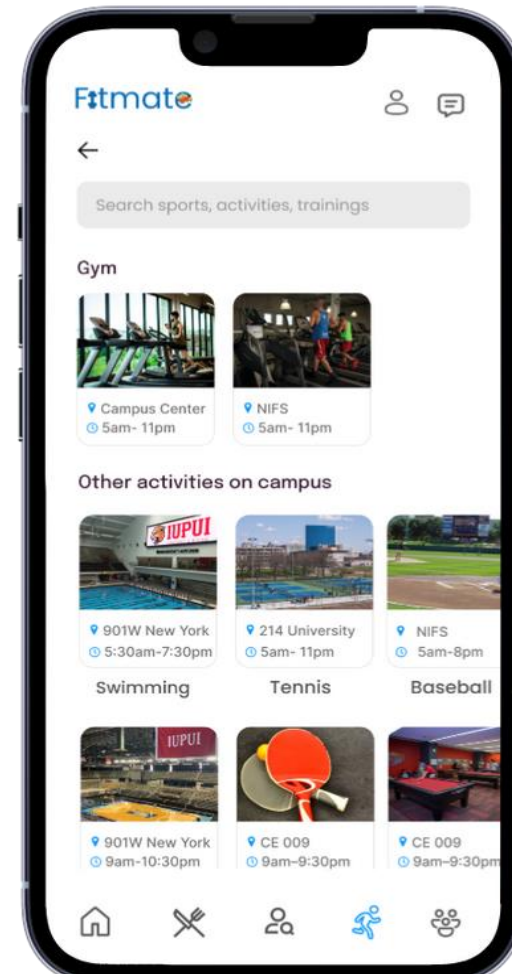
- Updates about trainings happening on campus.
- Short blogs about Diabetes care and awareness.
- Healthy meal options on campus and near campus.



Hi-Fidelity Prototype

Key Features

- Curated list of sports, activities on campus.
- Find a partner feature to help students find sports partners.



Testing

Think aloud



Participants successfully used the app, appreciating its straightforward design and intuitive navigation.

They suggested enhancements, such as the ability to add multiple meal selections at once and clearer information on meal pickup details.

Users desired more customization options in their profiles and a more robust filtering system to refine their partner search based on specific workout preferences.

Overall, the app was well-received, with requests for additional features to improve user engagement and personalization.

Evaluation Report

Usability Aspect Report (UAR)



Visibility of System Status

Users enjoyed the community feature fostering social connections and promoting healthy lifestyles but desired more detailed activity information for better decision-making.



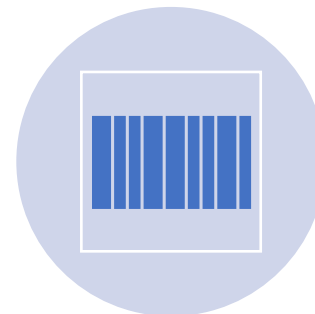
User Control and Freedom

Lack of an exit strategy from actions was a common problem, leading to user frustration over accidental actions without an undo option.



Help and Documentation

The absence of help features, and documentation was noted as a significant usability issue, affecting user confidence and engagement.

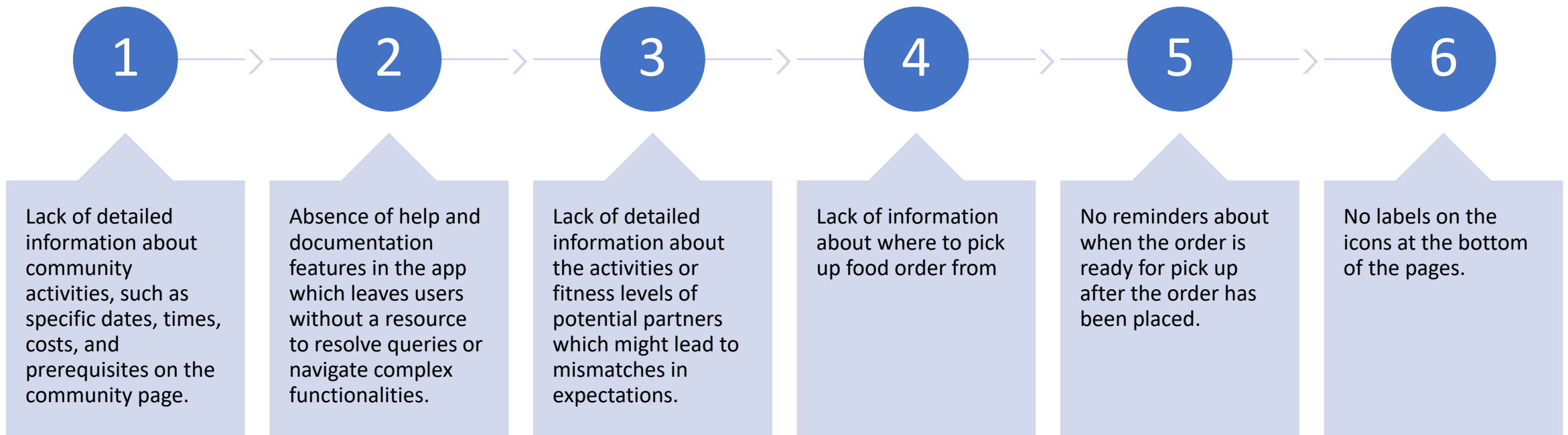


Incomplete Activity Details

The need for more precise order pickup details and a live tracking feature for food orders was identified to improve user experience.

Evaluation

The key problems identified through the evaluations are





Contributor

- ❖ **Dr. Lynn Dombrowski**, Associate Professor, Luddy School of Informatics, Computing and Engineering, Indiana University
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- ❖ **Qi Zhao**, HCI Masters Student, UX Researcher, Luddy School of Informatics, Computing and Engineering, Indiana University

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Thank You!
