Pound

NFT based Move to Earn App

CS6611-CREATIVE AND INNOVATIVE PROJECT

MOTIVATION

- The motivation behind this project is to make exercising more fun and rewarding for people.
- By using a special kind of digital token called NFTs, we can give users rewards for working out and reaching their fitness goals.
- It's like turning exercise into a game where you earn points and prizes for staying active.
- This not only helps motivate people to exercise more but also creates a sense of accomplishment and excitement around fitness.

01

Problem Statement

Problem statement

- Existing fitness apps often fail to effectively motivate users and sustain engagement over time, leading to high dropout rates.
- Market saturation and privacy concerns further compound the challenge of attracting and retaining users.
- This project aims to address these issues by leveraging NFTs and blockchain technology to create a unique fitness app that incentivizes and rewards users for their achievements, while ensuring data security and regulatory compliance.

02

Literature **Survey**

Literature Survey

SNO	TITLE	AUTHOR	YEAR	METHOD	ADVANTAGE	SETBACK	SOLUTION
1.	A smartwatch-based framework for real- time and online assessment and mobility monitoring	Sio Jurnalis Pipin Ronsen Purba Muhammad Fermi Pasha	2018	ROAMM for real-time and online assessment and mobility monitori ng	Leveraging smartwatch technology for data collection and monitoring	Potential limitations in accuracy or reliability	Enhancing data quality and system reliability.
2.	Collection and Processing of Data from Wrist Wearable Devices in Heterogeneous and Multiple-User Scenarios	Francisco de Arriba-Pérez, Manuel Caeiro-Rodríguez	2022	Analyzing data collection from wearable devices, identifying interoperabili ty challenges, proposing guidelines, and situating the work	Comprehensiv e approach to integrating various systems (wearables, smartphones, computers, and servers/cloud services) for smartwatch data collection	Limited progress in developin g smartwatc h apps for activity data collection	Investing in user-friendly smartwatch data collection apps and fostering collaborations can mitigate the setback of limited progress in this domain

Literature Survey

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3.	MedAi: A Smartwatch-Based Application Framework for the Prediction of Common Diseases Using Machine Learning	Shinthi Tasnim Himi, Natasha Tanzila, Monalisa, MD Whaiduzzaman, Alistair Barros, Mohammad shorif uddin	2023	multi-sensor smartwatch prototype called "Sense O'Clock" along with machine learning algorithms	Enabling comprehensive disease prediction	Lack of comprehensiv e solutions integrating wearable technology	Correct application of wearable devices can increase accuracy
4.	MiLift: Efficient Smartwatch-based Workout Tracking Using Automatic Segmentation	Chenguang Shen, Bo-Jhang Ho, Mani Srivastava	arXiv: 2022	Lightweight repetition detection algorithms	Eliminating the need for manual inputs	Reliance on commercial off-the-shelf smartwatches	Allowing users to customize tracking frequency

Literature Survey

SNO	TITLE	AUTHOR	YEAR	METHOD	ADVANTAGE	SETBACK	SOLUTION
5.	Watch Your Smartwatch	Sharrah, Ayed Salman, Imtiaz Ahmad	2018	Traditional forensic techniques such as logical acquisition, file system analysis	Addressing physical, backup	Lack of consideration for the security and privacy implications	Robust security measures such as user authentication
6.	Using Data from Wearables for Better Sleep	Juan F. Arias	2022	Comprehensive activity and sleep data aggregation, facilitating correlation analysis on sleep quality.	Gather real-time information on nutrition, activity, and sleep patterns	Data inaccuracies or inconsistencies due to limitations in wearable device sensors or self-reported nutrition data	Real time collection of wearable data and processing it for better representation of sleep data.

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7.	NFTs: Applications and Challenges	Wajiha Rehman; Hijab e Zainab; Jaweria Imran	2019	NFT Club - An attempt to generalize a concept that is pretty known to the public but needs to be understood clearly.	Addressing physical, backup	Lack of consideration for the security and privacy implications	Robust security measures such as user authentication
8.	NFT Club – A NFT Marketplace	R J Anandhi; Ankurit Bhakta; Aditya Purswani; Karan Karan; Aditya Mishra	2020	Comprehensive activity and sleep data aggregation, facilitating correlation analysis on sleep quality.	Gather real-time information on nutrition, activity, and sleep patterns	Data inaccuracies or inconsistencies due to limitations in wearable device sensors or self-reported nutrition data	Real time collection of wearable data and processing it for better representation of sleep data.

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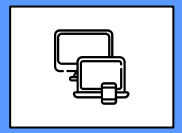
03

Gaps Identified

Gaps Identifed

Long-Term Engagement and Motivation

- ❑ Many fitness apps struggle to maintain user engagement beyond the initial excitement or commitment phase.
- ❑ By gamification and integrating NFTs as rewards for achieving fitness milestones, your app can provide users with tangible, collectible tokens that signify their accomplishments.



Community Support and Accountability

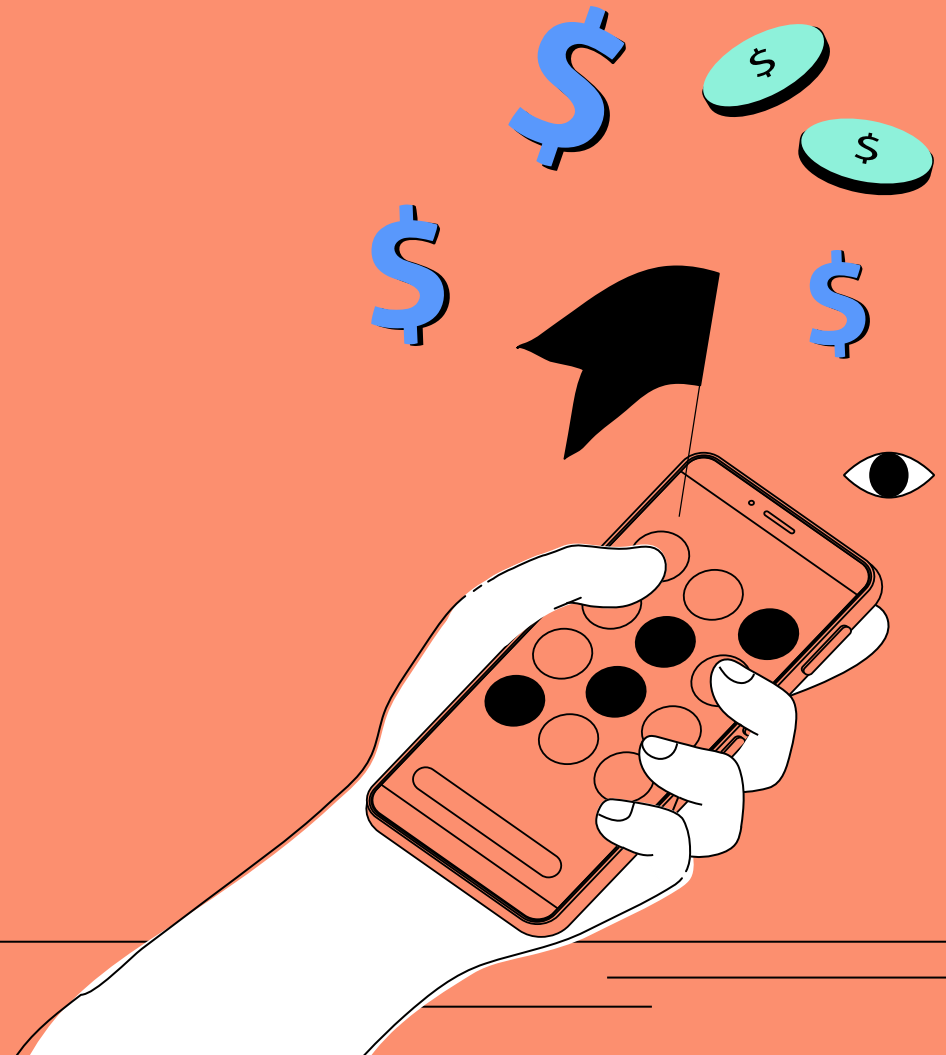
- ❑ Some fitness apps offer social features like sharing workouts or connecting with friends, there's often a lack of meaningful community engagement and support.
- ❑ Your app could establish a vibrant community where users can participate in challenges, share their progress, and support each other's fitness journeys

Monetization Opportunities for Fitness Professionals

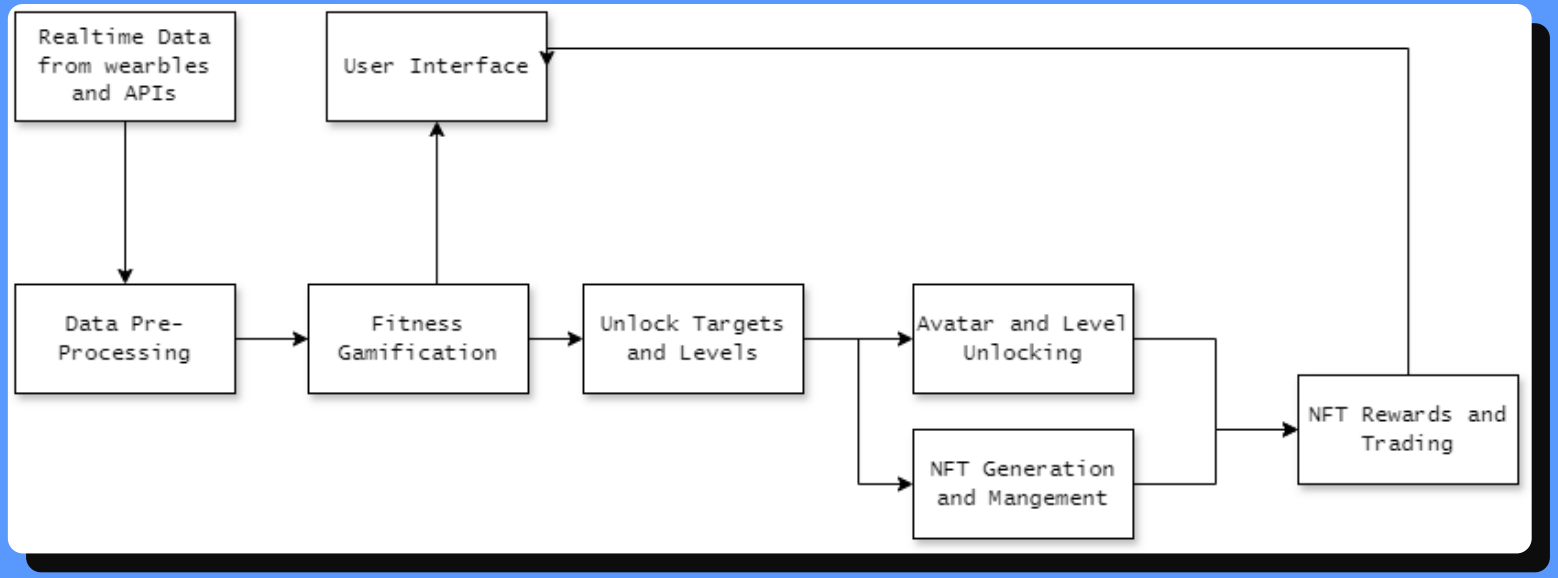
- ❑ Users engage in fitness games to win levels and achieve targets.
- ❑ These make them win NFTs and becomes an oppurtunity for them to mint and trade NFTs.

04

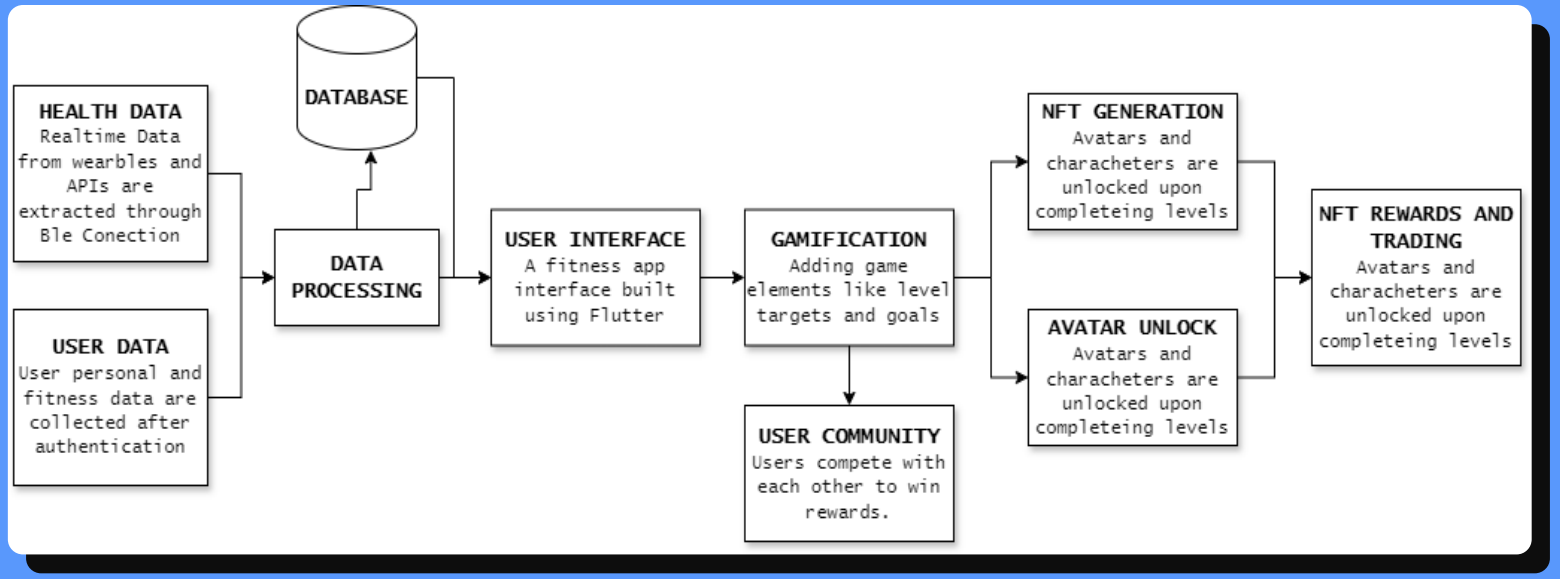
Diagrams



Block Diagram



Detailed Diagram



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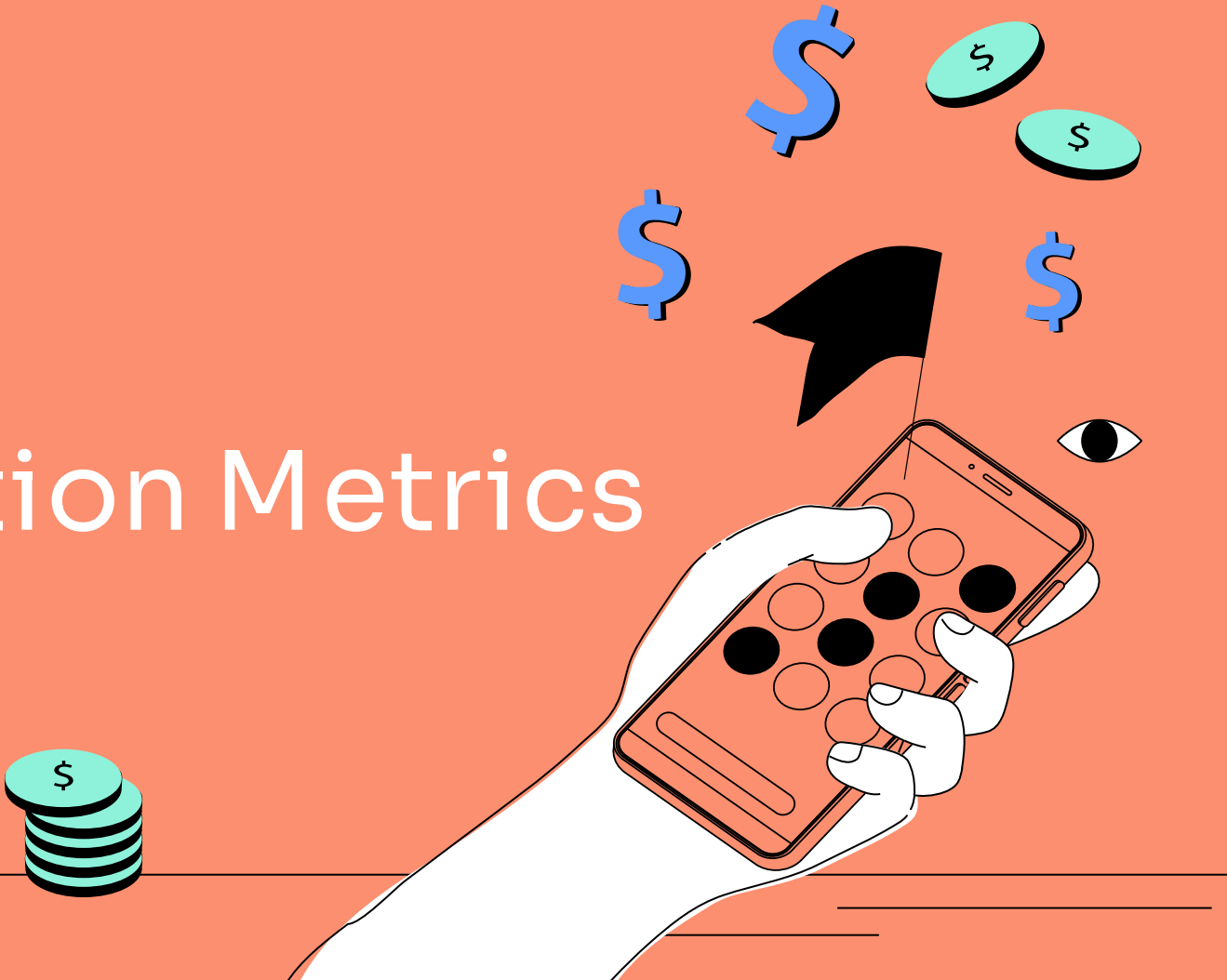
Evaluation Metrics



Evaluation Metrics

User Engagement and Retention

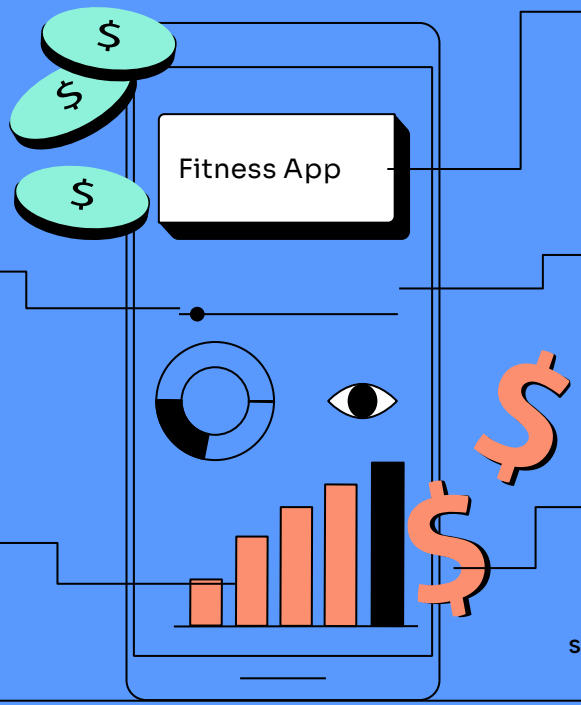
Track Daily and Monthly Active Users, session duration, and retention rate to gauge user interest and loyalty.

Gamification Effectiveness

Measure user progress, avatar unlocks, and participation rates in challenges to assess the impact of gamified elements on user motivation.

Real-time Data Integration

Ensure accuracy, low latency, and reliability of data from wearables and APIs to provide timely feedback on fitness activities.



NFT Generation and Management

Monitor efficiency, speed, and security of NFT creation and storage to maintain integrity and trust in the reward system.

Blockchain Integration

Evaluate transaction speed, costs, and security of blockchain-based transactions to facilitate smooth NFT rewards and trading.

User Satisfaction and Market Performance

Gather feedback, ratings, and market share data to understand user satisfaction and app positioning within the fitness and NFT market.

06

Module Wise Test Cases

Authentication

Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC _01	User enters a valid credentials	User has already registered in the website	Login using valid credentials	Login Successful and directs to the homepage	The user gets logged in and get directed to homepage
TC_02	User enters a wrong password	User has already registered in the website	Login using invalid credentials	Login unsuccessful and error message prompts	The login is unsuccessful and a error message prompts in the screen
TC_03	User enters a invalid institution code	User has already registered in the website	Login using invalid credentials	Login unsuccessful and error message prompts	The login is unsuccessful and a error message prompts in the screen

Wearable device Integration

Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC_01	User attempts to connect their wearable device to the app.	Wearable device is compatible and available for pairing.	Verify that users can successfully connect their wearable device to the app..	Wearable device is paired with the app, and fitness data can be synced.	Wearable device is paired with the app, and fitness data can be synced.
TC_02	User attempts to connect a non-compatible wearable device to the app.	Wearable device is not compatible with the app.	Ensure that users are unable to connect incompatible wearable devices.	User receives an error message indicating that the device is not supported.	User receives an error message indicating that the device is not supported.

Wearble RealTime Data

Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC_01	**Service UUID:** 00002a37-0000-1000-8000-00805f9b34fb	Wearable is connected via Bluetooth.	Heart Rate measurement from wearable.	Heart rate bpm	Heart rate bpm
TC_02	**Service UUID:** FF06	Wearable is connected via Bluetooth.	Step count measurement from wearable.	Step count	Step count
TC_03	**Service UUID:** 00000005-0000-3512-2118-0009af100700	Wearable is connected via Bluetooth.	Activity data measurement from wearable.	Calories Burned, Workout time	Workout time,calories Burned.

User Achievement

Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC_01	Simulated user reaching a predefined step count goal.	User account exists with a set step count goal.	Verify that when a user achieves a fitness goal (e.g., reaching a certain step count, burning a specific number of calories), the system triggers the NFT generation process.	Verify that the system generates the corresponding NFT and assigns it to the user's wallet.	System generates corresponding NFT .

Avatar Creation

Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC_01	Simulated user advancing to a higher level.	User account exists with a level advancement.	Ensure that when a user attains a new level, the system generates a unique avatar NFT.	The system generates a new avatar NFT reflecting the user's current level and assigns it to the user's wallet.	Avatar NFT generated and assigned to the user's wallet accurately.

Leaderboard and Competition

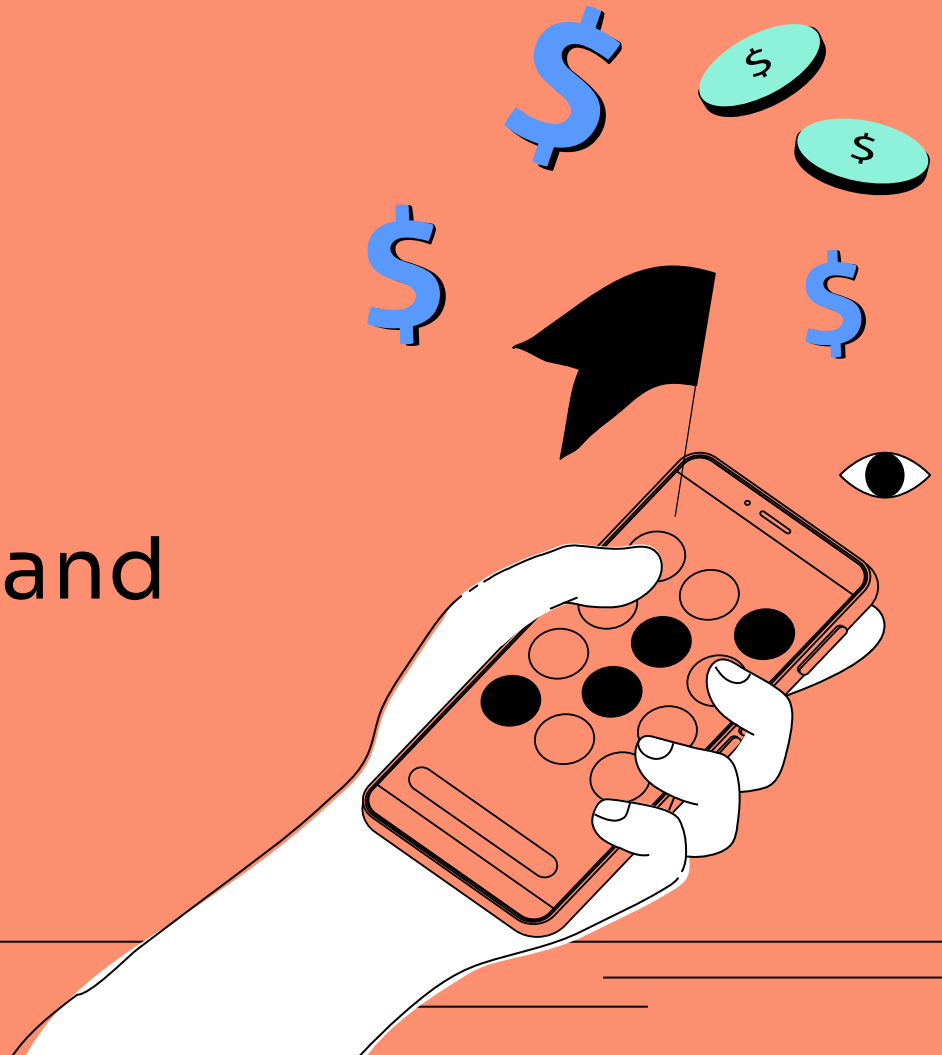
Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC_01	Simulated competition with user participation and winner determination	Ongoing competition with predefined rules and participants.	Validate that users who top the leaderboard or win a competition receive exclusive NFT rewards.	The system generates unique NFT rewards for competition winners and distributes them to their wallets.	NFT rewards generated and distributed correctly to competition winners.

NFT Generation

Test Case Id	Input	Pre-Condition	Description	Expected Output	Actual Output
TC_01	NFT transfer from the fitness app to the user's cryptocurrency wallet.	User has an active cryptocurrency wallet linked to the fitness app.	Test the integration between the fitness app and the cryptocurrency wallet for seamless NFT storage and management.	The NFT transfer is executed successfully, and the transferred NFT appears correctly in the user's wallet..	NFT transfer completed without errors, and the transferred NFT displayed accurately in the user's wallet.

07

Implementation and Screenshots

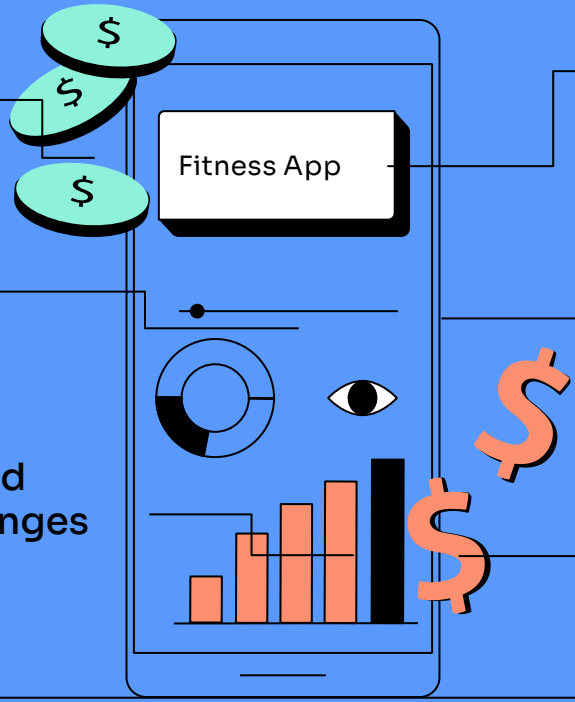


Pound App Sections

01 OnBoarding and Authentication

02 Health and Fitness Tracking

03 Fitness Targets and community challenges



04 Creature Avatar and NFT Rewards

05 NFT collection and Trade

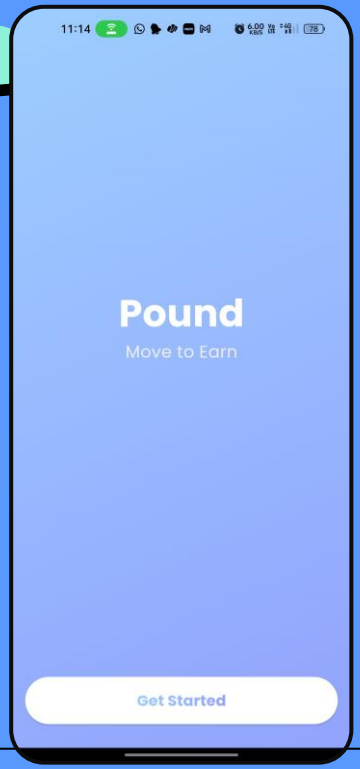
06 Profile and Info

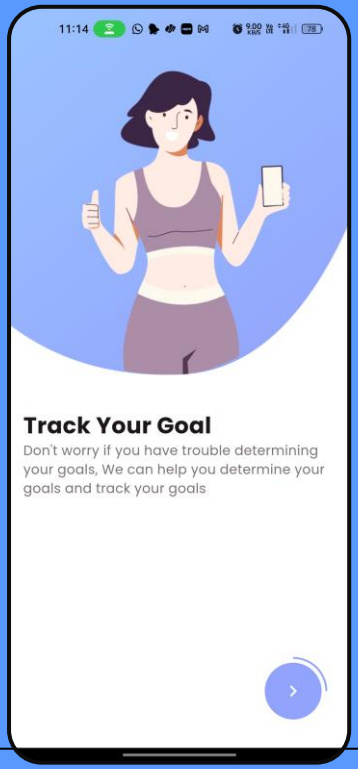
01

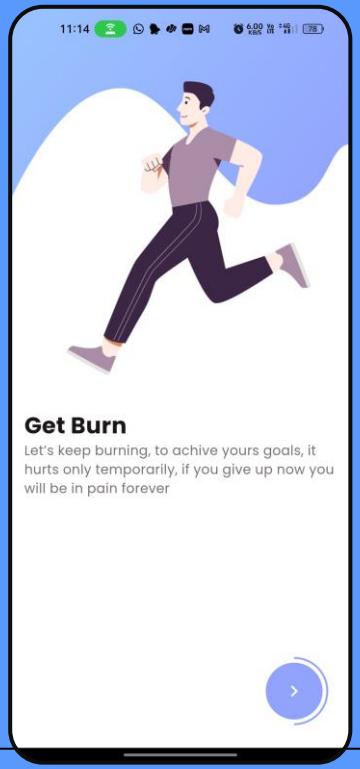
OnBoarding and Authentication

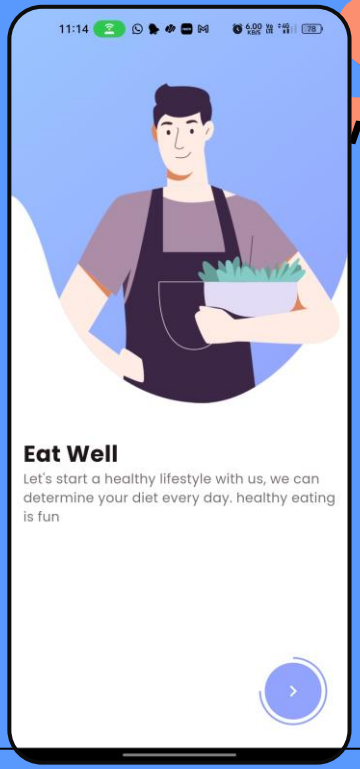
- The onboarding process may include tutorial screens highlighting key features of the fitness app.
- Tracking workouts, setting meal plans, or accessing instructional exercise videos, to help users get acquainted with the app's functionalities quickly.
- Login Screen and Registration Screen are used to authenticate and Invite the user.

01 OnBoarding and Authentication









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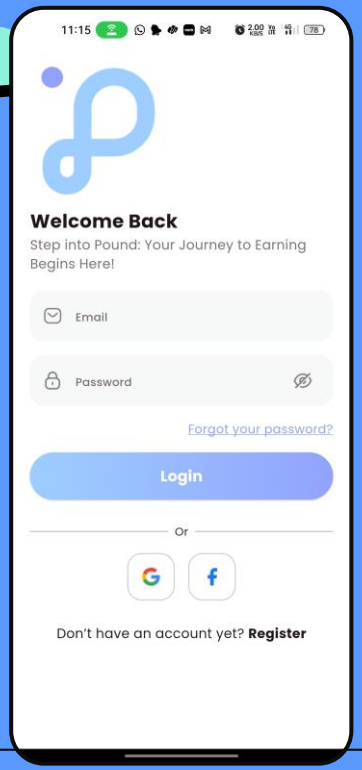
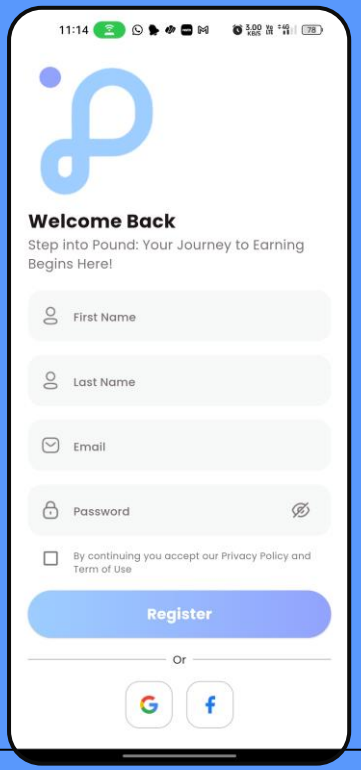
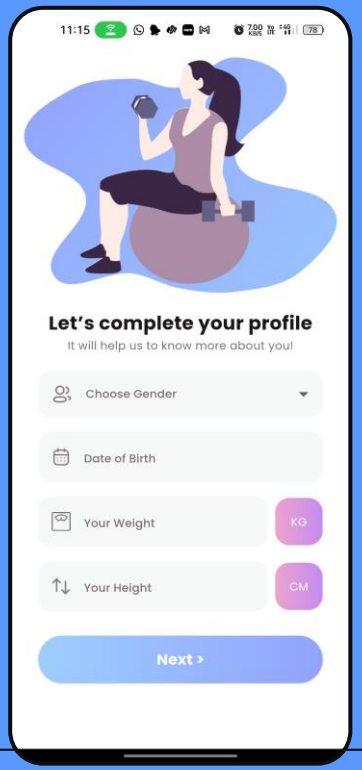




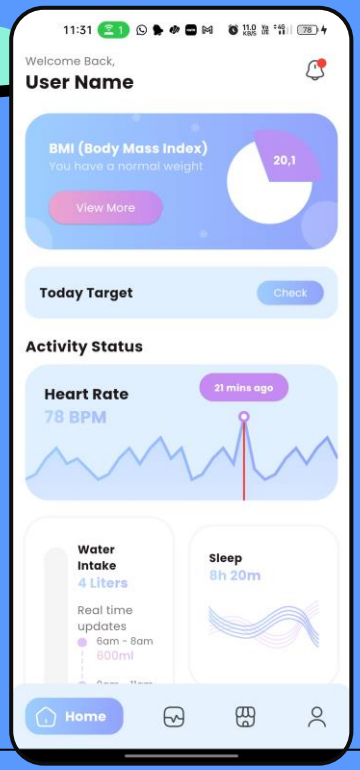


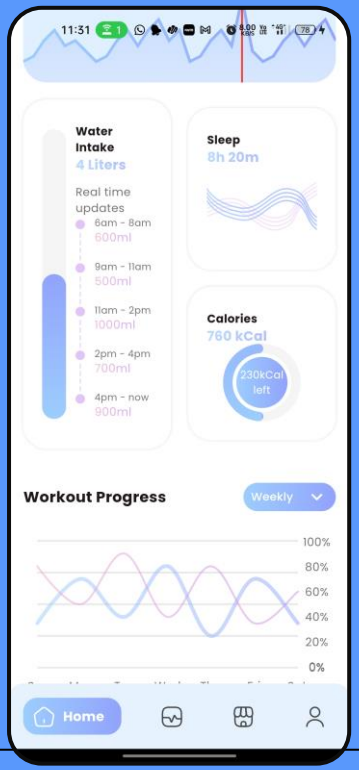
02

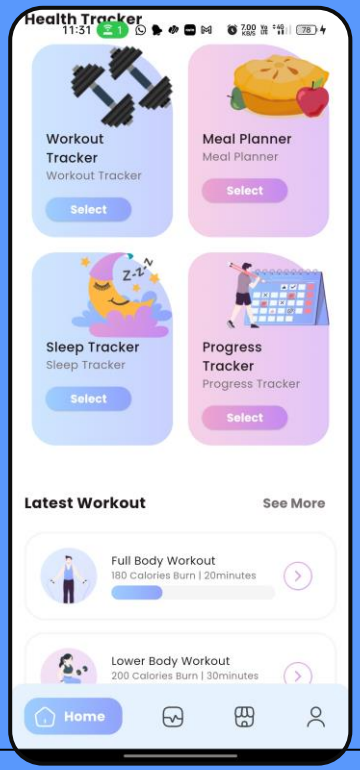
Health and Fitness Tracking

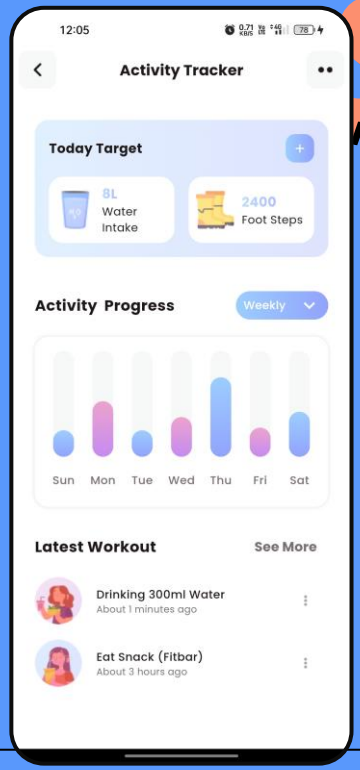
- User Data is collected through APIs and wearables for Heath and Fitness Tracking.
- These data are fed to Fitness Trackers to analyze and visualize the fitness data.
- example: Sleep Tracker ,Water Intake, Heartrate ,Progress Tracker, Meal planner.

02 Health and Fitness Tracking









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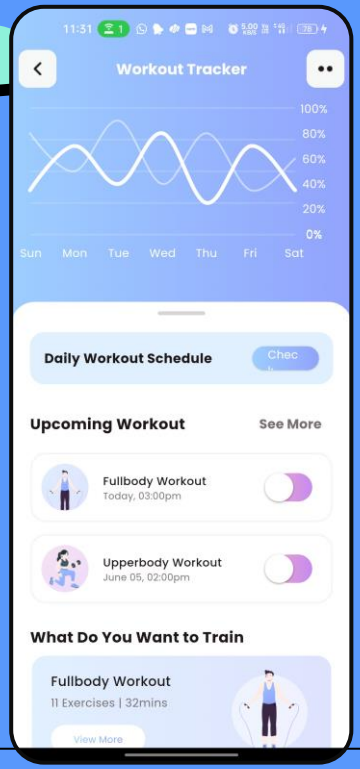
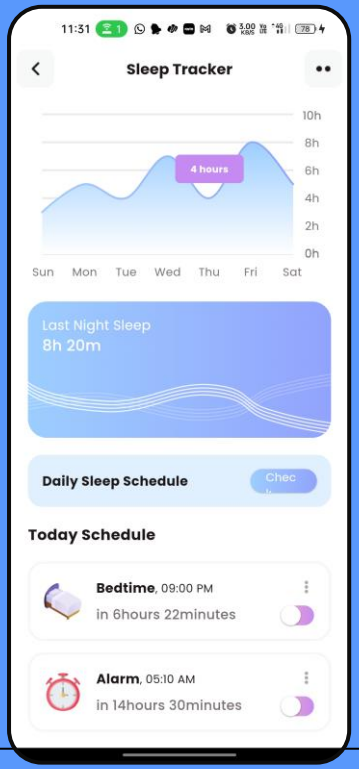
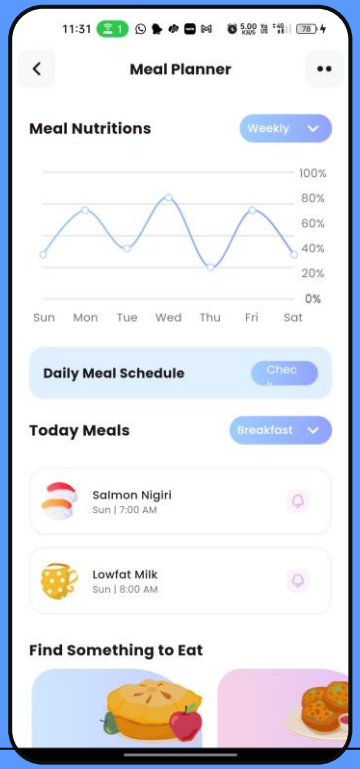
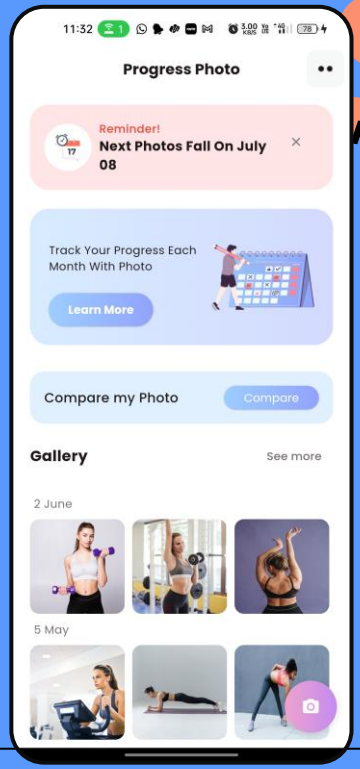






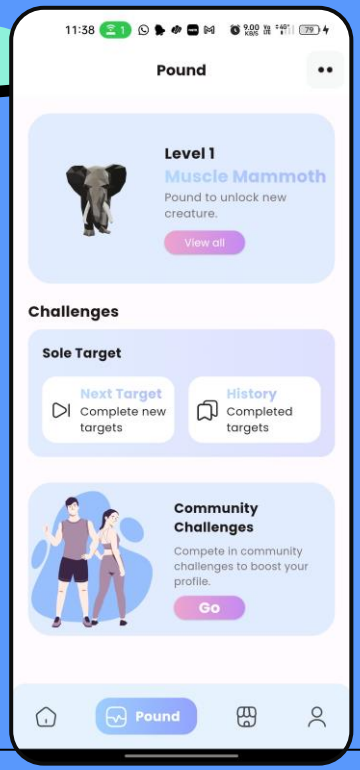


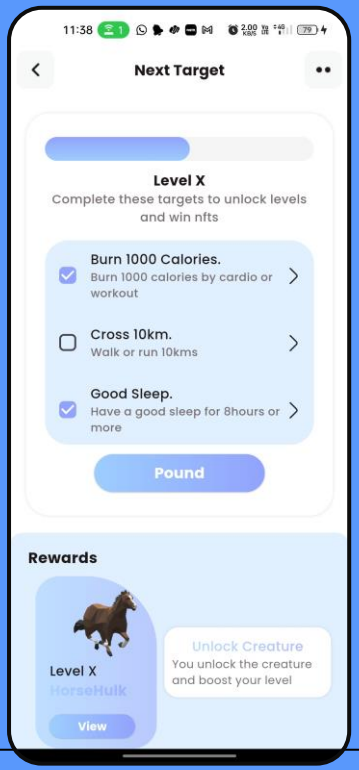
03

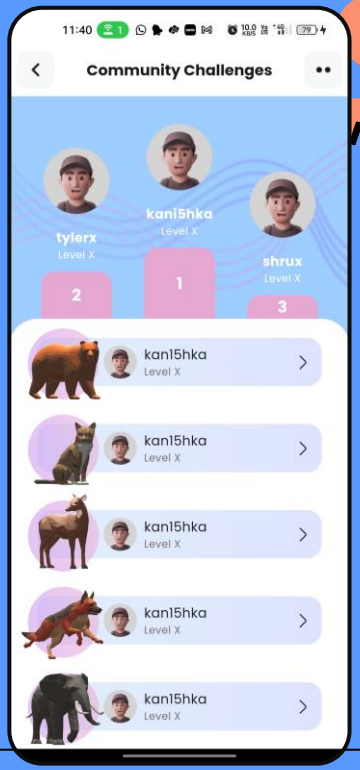
Fitness Targets and Community Challenges

- Fitness Targets are transformed into thrilling challenges, turning workouts into epic battles where users compete and conquer.
- Users hustle with each other top the leaderboard and win rarity NFTs.

03 Fitness Targets and Community Challenges





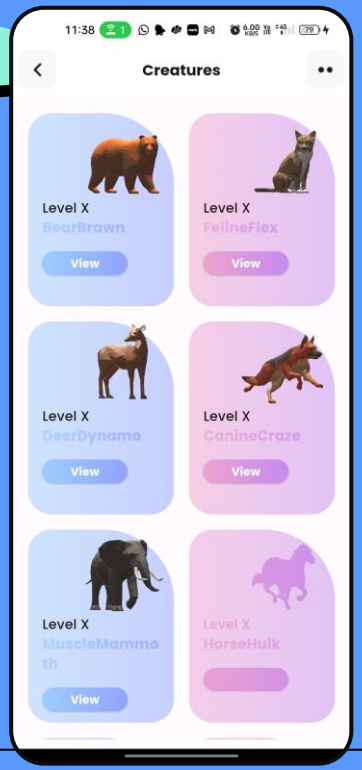


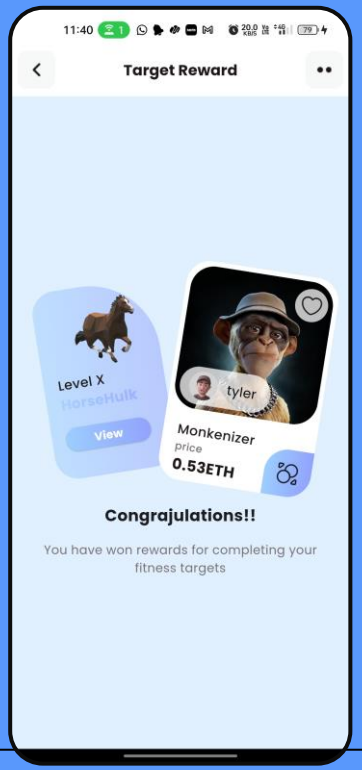
04

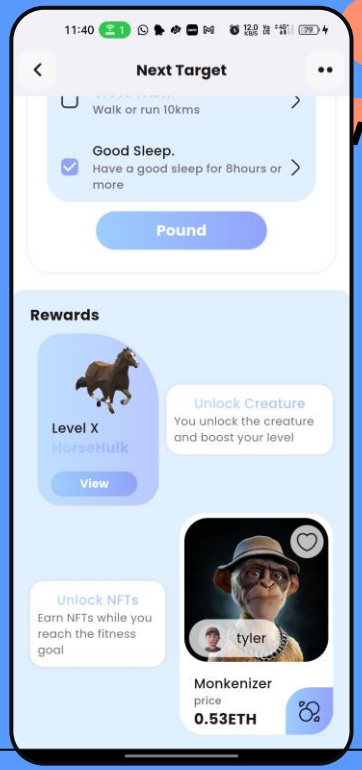
Creature Avatar and NFT Rewards

- Unlock Fictional Creature avatars at each level, adding a magical twist to workouts as mythical allies join the quest for fitness supremacy.
- Earn NFTs with every level conquered, turning sweat into digital wealth and making each achievement a valuable token of success.

04 Creature Avatar and NFT Rewards





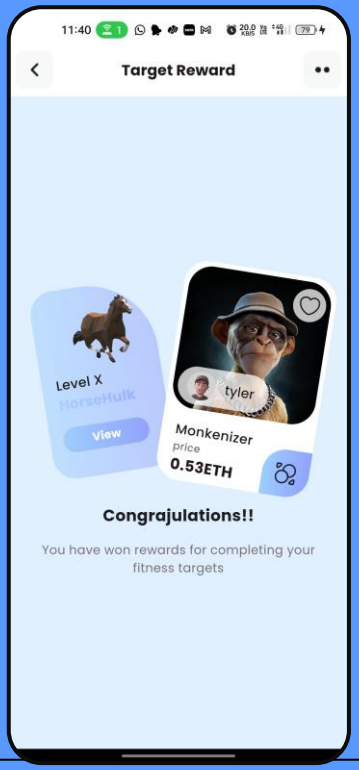


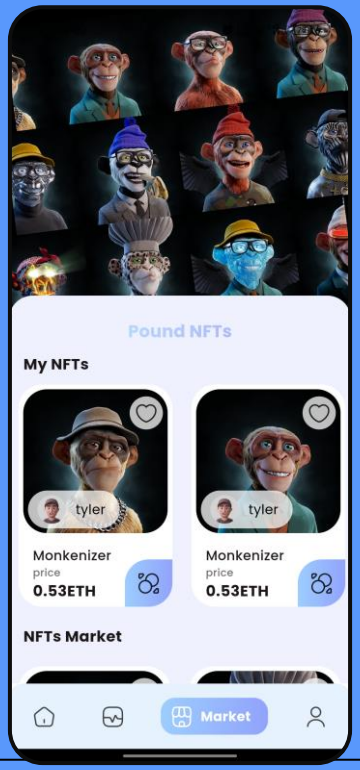
05

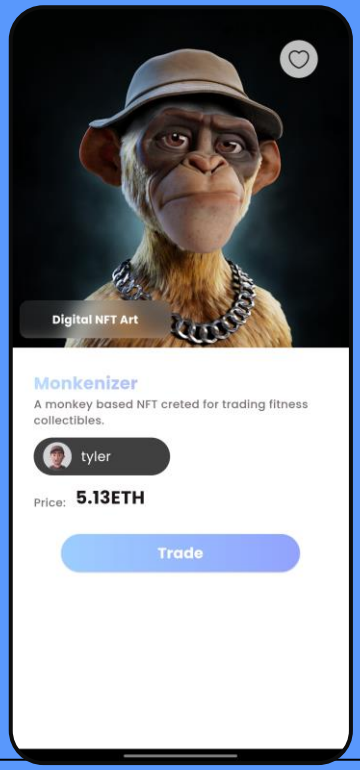
NFT Collection and Trade

- The unlocked NFTs are available in the users wallet and they can trade them for money.
- The app stands out by combining fitness goals with earning potential, empowering users to achieve personal fitness milestones while also providing them with opportunities to earn..

05 NFT Collection and Trade







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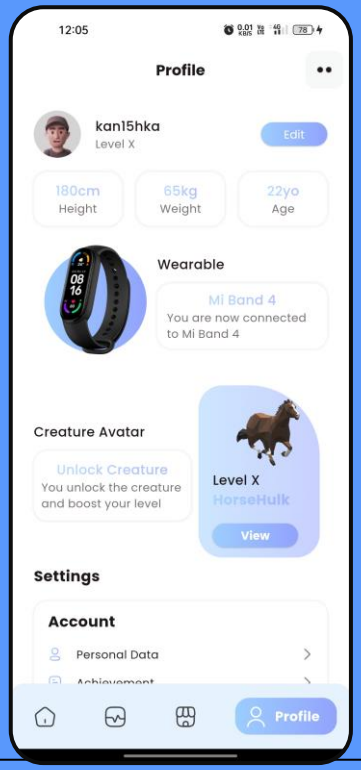
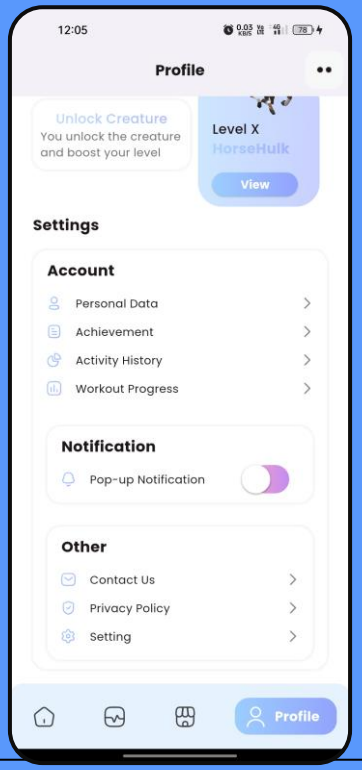
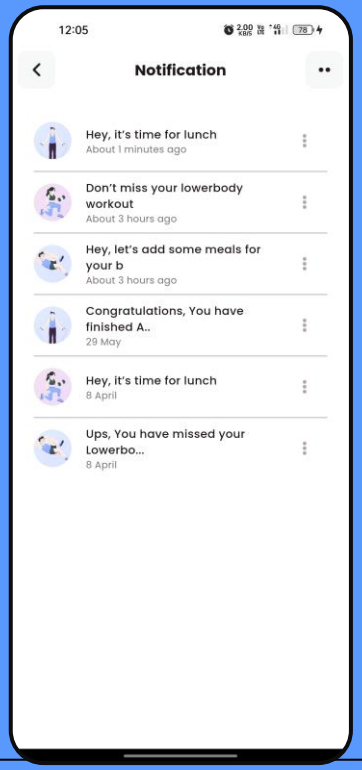
Profile and Information

- Create user profiles with comprehensive fitness data and personalized information, allowing individuals to track their progress, set goals, and access tailored recommendations for optimal results.
- Integration with wearable data are also displayed.

06 Profile and Information

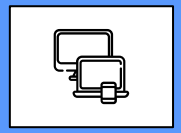






Project Individual Contribution

TEAM 8



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Frontend and Integration

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Wearable Integration and Backend

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Blockchain and Backend

Thank You

POUND TO LOSE POUND, AND GAIN POUND