Happiness Monitoring System
iOS Application + Django Backend with Dockerized Deployment

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1. Project Summary

The **Happiness Monitoring System** is a cross-functional project that integrates a modern SwiftUI iOS frontend with a scalable Django REST backend, designed to log and display users' emotional well-being in relation to their daily activities.
It provides an intuitive and delightful user experience with smooth animations, real-time updates, aesthetic UI components, and seamless backend integration using RESTful APIs.

2. Tech Stack

Layer	**Technology Used**
Frontend	SwiftUI (iOS 17.2 Simulator)
Backend	Django 4.x, Django REST Framework
Database	PostgreSQL
Containerization	Docker, Docker Compose
Design Assets	Smiley Background Image (local asset)
State Management	@EnvironmentObject, @State, Timer in SwiftUI

3. System Architecture

User (iOS) ⇄ APIManager.swift ⇄ Django REST API ⇄ PostgreSQL DB
Modules:
Backend:

- models.py: Defines the Survey and UserSubscription models
- views.py: API endpoints for survey submission, fetching recent surveys, and prompt status
- serializers.py: JSON serialization for frontend use
- urls.py: RESTful routing
- Dockerfile, docker-compose.yml: Container setup

Frontend:

- HomeView.swift: Displays recent surveys and UI buttons
- SurveyView.swift: Input view for taking new survey
- SurveyStore.swift: Handles state and triggers API calls
- APIManager.swift: Abstracts REST communication
- ContentView.swift: Entry point, connects all views

4. How to Run (Minimal Setup)

Backend

```
docker compose up --build
docker compose run web python happiness/manage.py migrate
```

That's it. No token generation or manual user config required.

iOS App

1. Open HappinessMonitor.xcodeproj in Xcode
2. Run on iPhone 15 Pro - iOS 17.2
3. All features are integrated and functional, including:
    - Survey submission
    - Prompt notifications
    - Real-time survey list refresh

5. Key Features & Functionality

Take a Survey

- Input: Free-text activity name
- Slider: Happiness score (1 to 10)
- Validation: Ensures non-empty activity
- Submit & Cancel buttons styled equally
- Smooth transition and alert feedback

Prompt Notification System

- Timer triggers every 20 seconds
- If subscribed, an alert appears:

"A new survey is available for you."

- User can tap "Take Survey" or dismiss it

Recent Surveys

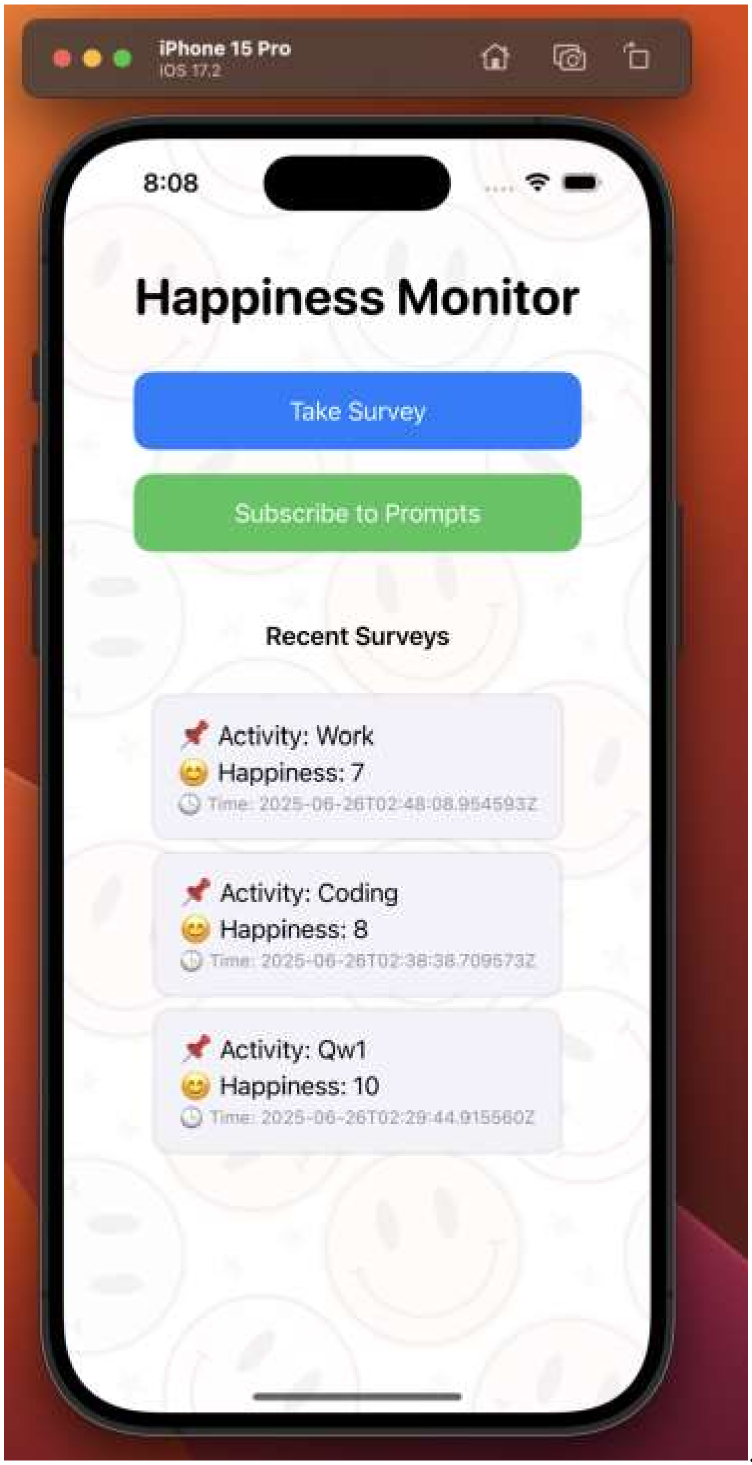
- Shows 3 latest entries
- Includes:
    - Activity name
    - Happiness score (emoji supported)
    - Timestamp (UTC format)
- Displayed with rounded card-style containers

UI/UX Styling

- Background Image: Subtle smiley design with low opacity
- Consistent fonts and padding
- Buttons:
    - Blue: Primary (Take Survey / Submit)
    - Green/Red: Subscription toggle
    - Gray: Cancel

6. Screenshots

Screenshot 1 – Home Screen (Initial View)
The main dashboard showing the "Happiness Monitor" title, with options to take a survey or subscribe to prompts. Background image of smiley adds a playful aesthetic.



Happiness Monitor

Recent Surveys

📌 Activity: Work
😊 Happiness: 7
🕓 Time: 2025-06-26T02:48:08.954593Z

📌 Activity: Coding
😊 Happiness: 8
🕓 Time: 2025-06-26T02:38:38.709573Z

📌 Activity: Qw1
😊 Happiness: 10
🕓 Time: 2025-06-26T02:29:44.915560Z

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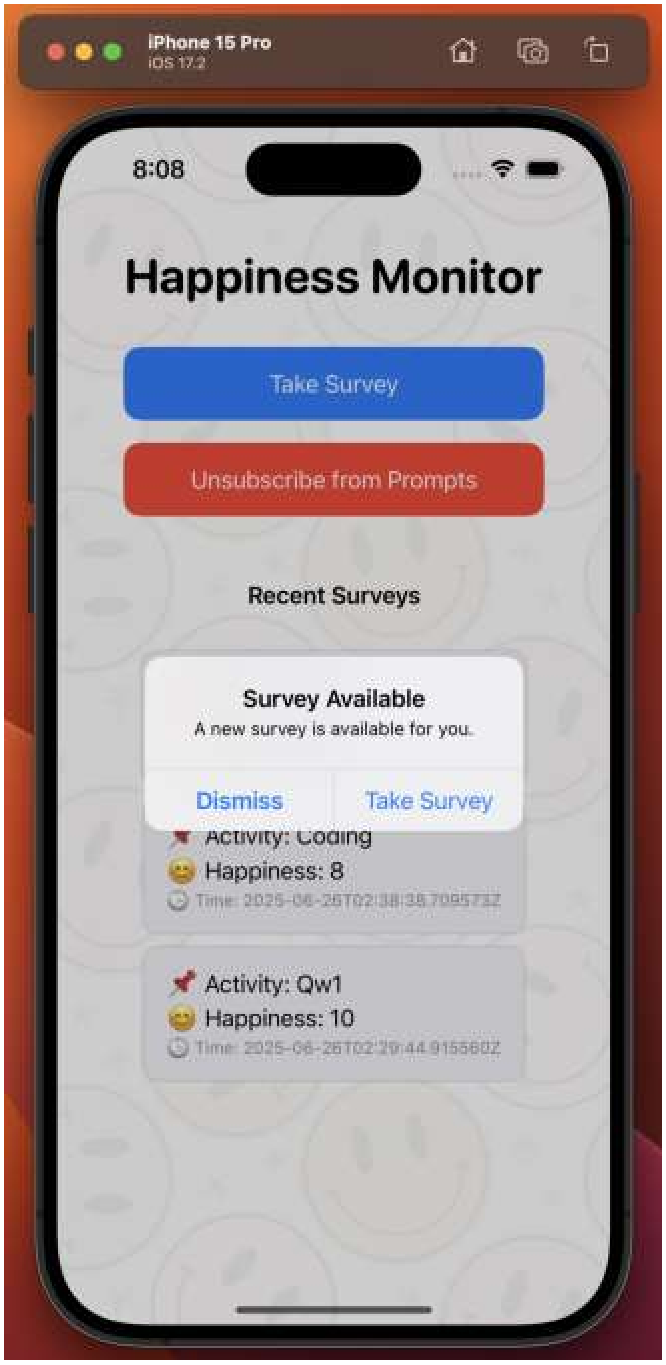
Screenshot 2 – Survey Prompt Alert
Alert triggered by the subscription timer prompting the user to take a survey. This simulates push-like behavior without needing notification permissions.



Happiness Monitor

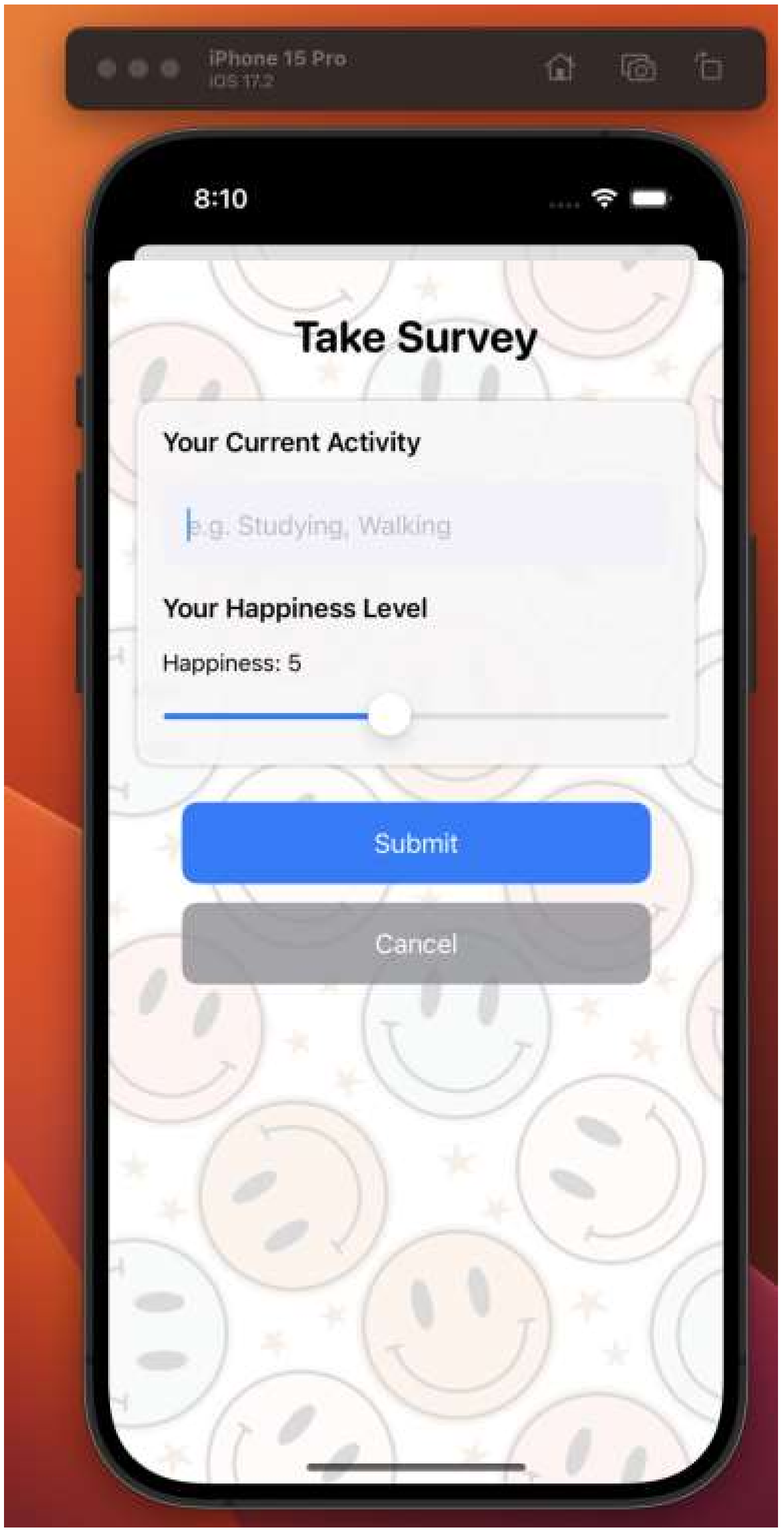
Recent Surveys

Survey Available
A new survey is available for you.

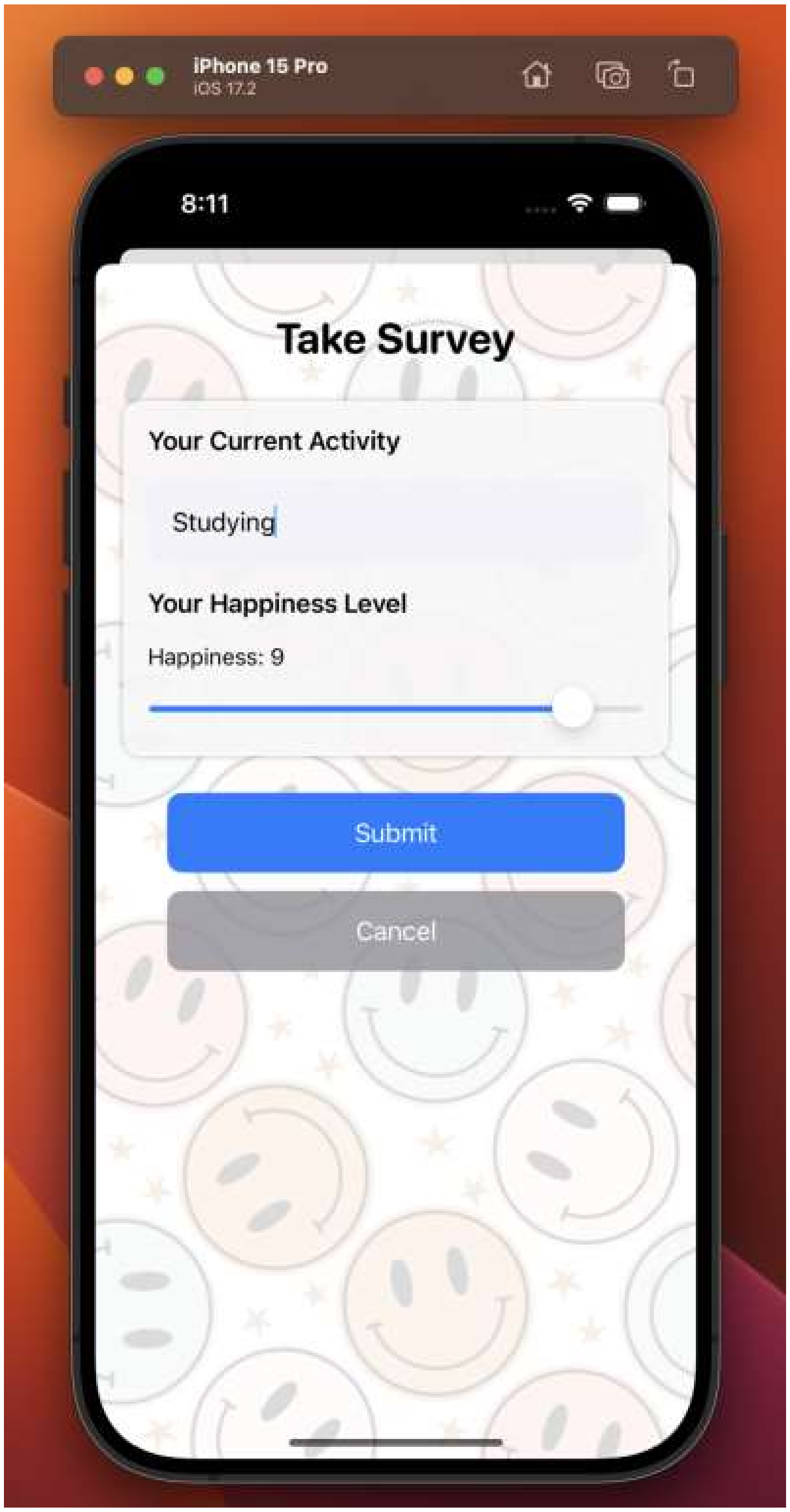
📌 Activity: Coding
😊 Happiness: 8
🕓 Time: 2025-06-26T02:38:38.709573Z

📌 Activity: Qw1
😊 Happiness: 10
🕓 Time: 2025-06-26T02:29:44.915560Z

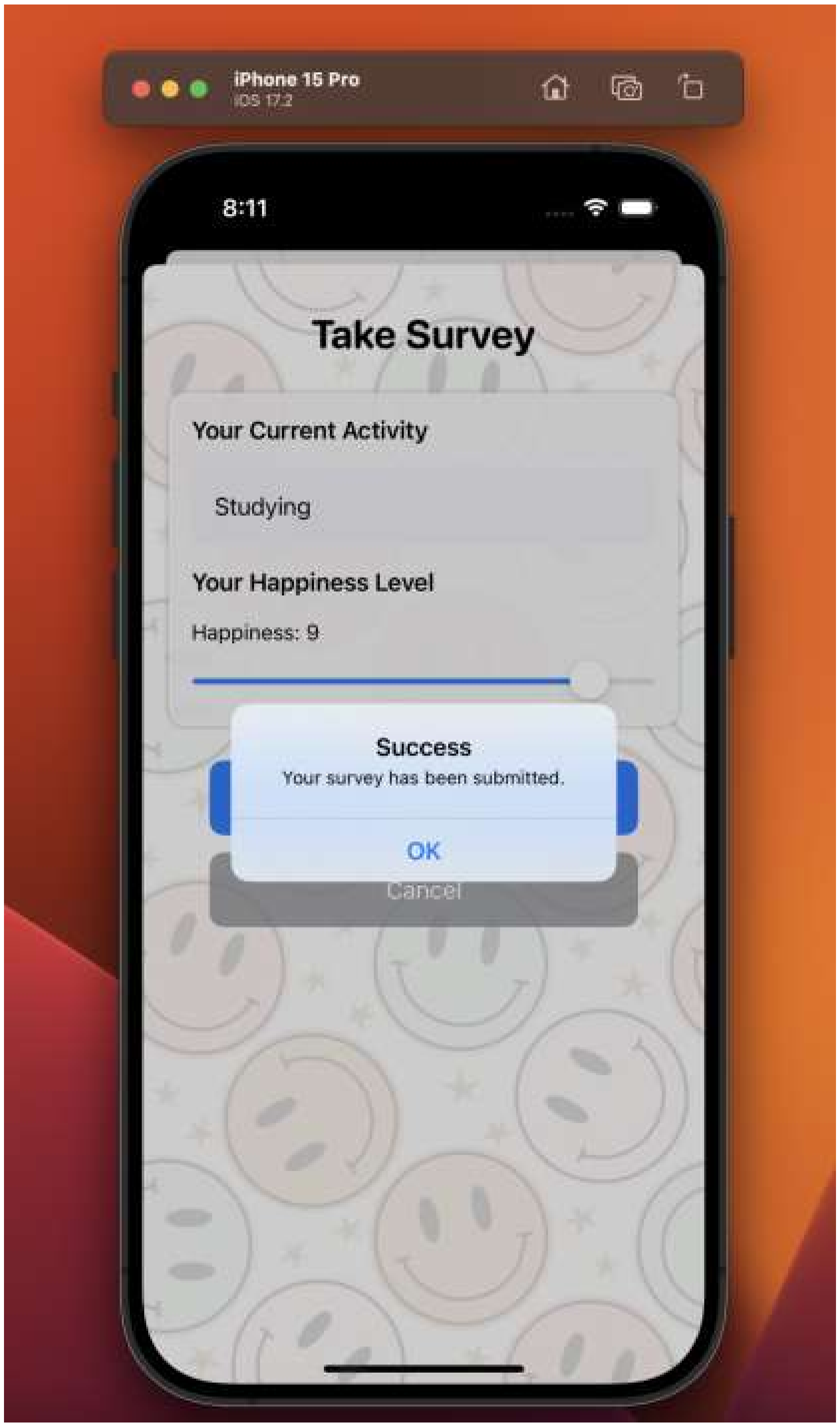
Screenshot 3– Take Survey Screen (Initial State)
Input fields allow the user to type their activity and choose a happiness score using the slider. The background smiley image continues for design consistency.



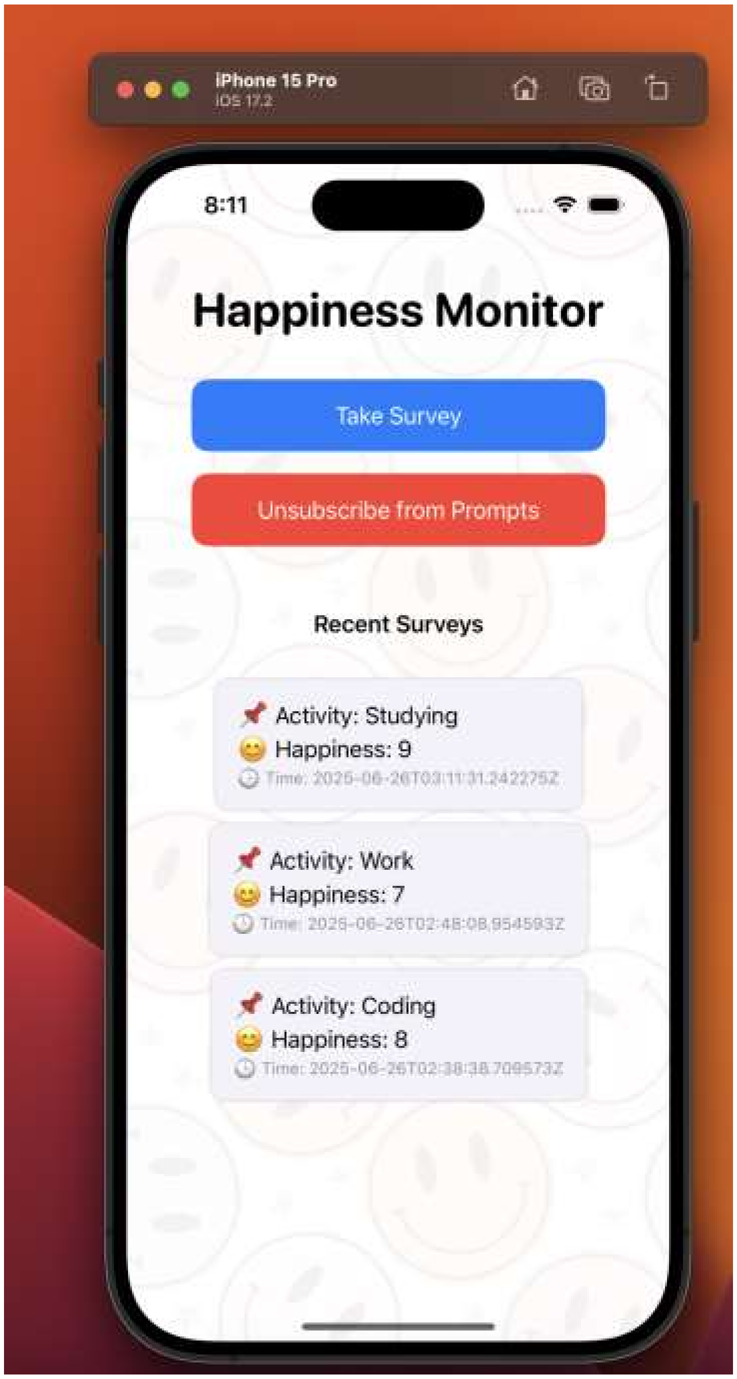
Screenshot 4 – Take Survey In-Progress
The user has typed “Studying” and set happiness to 9. Buttons are styled uniformly, ensuring visual balance and accessibility.



Screenshot 5 – Submission Success Alert
Confirmation alert shown after successfully submitting the survey. User is redirected back after tapping "OK".



Screenshot 6 – Home Screen Refreshed After Submission
Displays the updated survey list including the new “Studying” entry. Button state also reflects current subscription status.



Happiness Monitor

Recent Surveys

📌 Activity: Studying
😊 Happiness: 9
🕒 Time: 2025-06-26T03:11:31.242275Z

📌 Activity: Work
😊 Happiness: 7
🕒 Time: 2025-06-26T02:48:08.954593Z

📌 Activity: Coding
😊 Happiness: 8
🕒 Time: 2025-06-26T02:38:38.709573Z