FACULTY OF COGNITIVE SCIENCE AND HUMAN DEVELOPMENT

KMK 3323 HUMAN-COMPUTER INTERACTION

PHASE 2: Conceptual Design and Mid-Fidelity Prototyping (Task 2)

Title: Gamified Period Tracking App

Lecturer: Professor Madya Dr. Mohd Kamal Bin Othman (G02)

Date Of Submission: 21 November 2025

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1. Personas and Scenarios

Three personas were created to represent primary users using the PACT framework. Each persona is paired with a scenario that demonstrates two of the Most Viable Product (MVP) features, ensuring full coverage of all six of our MVP features.

Persona 1: Aina Farhana (21), Undergraduate Student

People	High-frequency tracker wants accuracy and consistency. Experiences mild cramps and stress during exam period.
Activities	Log symptoms every night. Check predictions weekly.
Contexts	Use the app in her dorm room, mainly at night.
Technologies	Android phone, and prefer simple interfaces without ads.

Scenario 1:

Aina finishes studying and opens the app before going to sleep. She uses the Fast Daily Logging Screen to quickly select her mood, flow, and cramps. The screen allows completion within seconds due to its one-page and large-icon design. After logging, she views the Accurate Cycle Prediction screen, which updates immediately and shows her next period estimate with high clarity. This reassures her as she plans an upcoming trip.

MVPs Covered: Using the Fast Daily Logging Screen and Accurate Cycle Prediction

Persona 2: Valerie Chong (23), Final-Year Student

People	Values privacy and frequently share screens during presentations.
Activities	Log symptoms occasionally. Depending on reminders.

Contexts	Use the app in public spaces and classrooms.
Technologies	iPhone, and prefer discreet and private digital tools

Scenario 2:

Before a presentation, Valerie enables Privacy Mode (discreet icon and local data) so that her app appears under a neutral name and icon. Later in the evening, she receives a soft reminder prompting her to log symptoms. Thanks to the privacy features, she confidently interacts with the app even when others may see her phone screen.

MVPs Covered: Using Privacy Mode and Reminders & Notifications

Persona 3: Anisah Rahim (22), Busy Student with Irregular Cycles

People	Frequently forget to log and motivated by rewards.
Activities	Uses analytics occasionally. Log symptoms when reminded.
Contexts	Use the app at night. Routines vary due to academic demands.
Technologies	Android phone and prefer motivational gamified apps.

Scenario 3:

After submitting an assignment, Anisah opens the Simple Analytics Dashboard to view her cycle patterns and mood correlations. She logs her symptoms and receives a new badge and a streak update from the Gamification (badges, streaks, level system) feature. The reward system encourages her to maintain consistent logging.

MVPs Covered: Using the Simple Analytics Dashboard and Gamification (badges, streaks, level system)

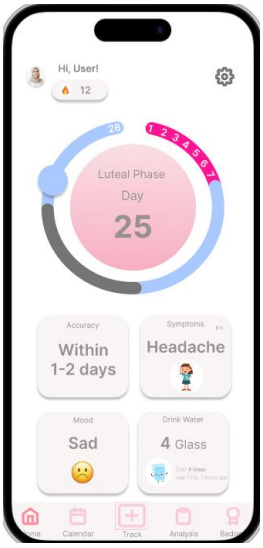
2. Mid-Fidelity Wireflow

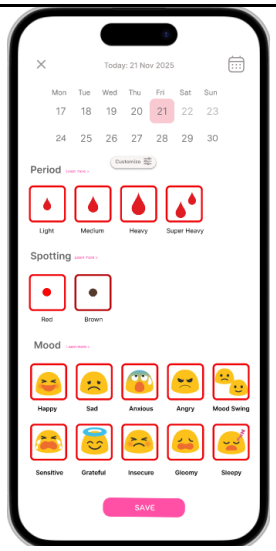
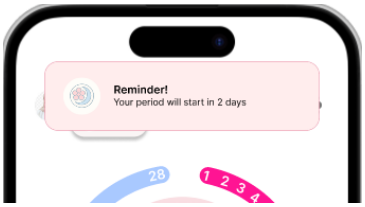
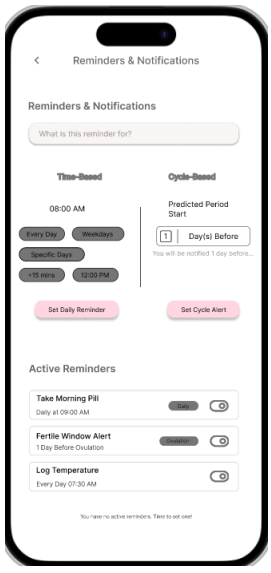
We designed the Mid-Fidelity Wireflow using Figma. The Design Rationale Matrix (DRM) and Simple Design System were used as guides for the design. All of the pages are available in the Appendices section of the report.

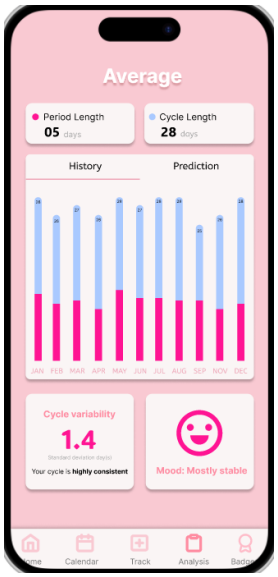
Link for the Mid-Fidelity Wireflow in Figma:

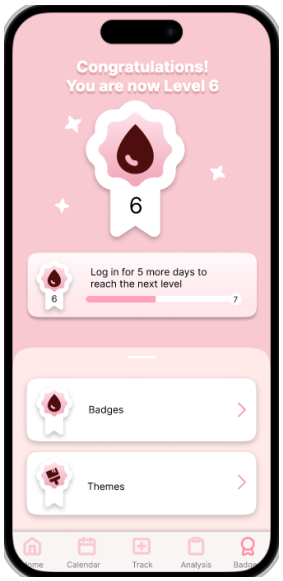
https://www.figma.com/proto/v7URTQ4K8oMdn0ZlRdvJrw/mid-fidelity-HCI?node-id=0-1&t=9Ji2Nn7EvgS96J6k-1

3. Design Rationale Matrix (DRM)

MVP Feature	User Need Addressed	Design Decision	HCI Principle Justification
1. Accurate Cycle Prediction 	Users need reliable and understandable predictions	Confidence Indicator: The interface explicitly displays a "Confidence Level" (e.g., "within 1-2 days") adjacent to the predicted date range.	Visibility of System Status (Nielsen's Heuristic 1). The design ensures the system's status is visible by disclosing the algorithm's certainty level. This keeps the user informed rather than hiding the probabilistic nature of the data.
2. Fast Daily Logging Screen	Users require a rapid and effortless logging process (under 30 seconds).	Prominent Tab Bar Button: The bottom navigation bar features a centrally positioned,	Affordance (Norman's Principles). The button's increased size and central placement provide a strong visual clue (affordance) that it is the

MVP Feature	User Need Addressed	Design Decision	HCI Principle Justification
		enlarged logging button that is visually distinct from the other navigation icons.	primary action. This invites immediate interaction without requiring the user to search for the feature.
3. Reminders & Notifications  	Users need flexible, timely reminders to support consistency	Custom Time-Picker: A popup window enables users to select the precise time and frequency for their alerts.	Flexibility and Efficiency of Use (Nielsen's Heuristic 7). The system supports diverse user schedules. It permits users to customize frequent actions (notifications) to align with their personal routines.

MVP Feature	User Need Addressed	Design Decision	HCI Principle Justification
4. Privacy Mode (discreet icon & local data) 	Users require data confidentiality when accessing the application in public environments.	Privacy Toggle: A prominent switch in the settings instantly masks sensitive text and alters the application interface.	Equitable Use (The 7 Principles of Universal Design). The design adheres to the guideline to "avoid segregating or stigmatizing any users." This feature allows users to access their health data in public spaces without fear of embarrassment or social stigma.
5. Simple Analytics Dashboard 	Users require straightforward insights into their health patterns without mental effort.	Visual Trends: The dashboard utilizes bar graphs to illustrate cycle history rather than presenting a text-based list of dates.	Recognition Rather Than Recall (Nielsen's Heuristic 6). Visualizing the data minimizes the user's cognitive load. Users can simply recognize the visual trend instead of having to mentally recall or calculate dates.

MVP Feature	User Need Addressed	Design Decision	HCI Principle Justification
6. Gamification (badges, streaks, level system) 	Users require motivation to maintain a consistent daily logging habit.	Badges & Streaks: The application awards digital "Badges" and "Medals" to acknowledge consistent usage.	Match Between System and the Real World (Nielsen's Heuristic 2). The system utilizes familiar metaphors from the real world (such as medals and achievement badges). This makes the tracking process feel intuitive and relatable to the user.

4. Simple Design System / Style Guide

A design system ensures consistent UI components across all prototypes and we follow it to maintain a consistent style, improve usability and make the design process more organized and efficient.

Typography

- Font Family: Inter
- Heading Sizes: 18–22 pt (Semi Bold)
- Body Text: 12–14 pt (Regular)
- Caption / Supporting Text: 10-12 pt
- Chosen for readability and consistent appearance across different screen sizes.

Colour Palette

Default Mode

Purpose	Colour	Contrast Ratio	Usage Notes
Primary Text	#000000 #979191 #FF1493 #FF8CA2 #827C7C	Higher ratio: #FF8CA2 (9.52:1) Lower ratio: #827C7C (5.12:1)	Main text, headings and labels
Background	#FFFFFF	12.6:1	Main screen background
Primary Background (Soft Pink)	#FFE9E9	18.08:1	Soft section background
Primary Accent (Pink)	#747474 #F9C9D2 #FF8CA2 #FAF5F5	Higher ratio: #FAF5F5 (19.44:1) Lower ratio: #747474 (3.87:1)	Buttons and active states
Secondary Accent (Light Accent)	#F9C9DA #FF8CA1	Higher ratio: #F9C9DA (14.39:1)	Icons and calendar states

Purpose	Colour	Contrast Ratio	Usage Notes
	#C1C1C1 #FCC21B	Lower ratio: #FF8CA1 (9.52:1)	
			

Privacy Mode

Purpose	Colour	Contrast Ratio	Usage Notes
Primary Text	#6F6F6F	5.47:1	Main text, headings and labels
Background	#000000	1.71:1	Main screen background
Primary Background (Charcoal)	#3B3838	1.81:1	Soft section background
Primary Accent (Gray)	#D9D9D9 #757575	Higher ratio: #D9D9D9 (11.89:1) Lower ratio: #757575 (3.73:1)	Buttons and active states
Secondary Accent (Light Accent)	#3B3B3B #505050 #FCC21B	Higher ratio: #505050 (3.01:1) Lower ratio: #3B3B3B (1.33:1)	Icons and calendar states
			

Components

Component	Details
Primary button	• 44px height • Rounded 8px corners
Input field	• High-contrast border • Dark text for clarity label style
Icons	• 24px line icons for clarity • Simple line with pink and gray
Navigation bar	• 4-item bottom navigation
Cards and containers	• Rounded 12-16px • Used for analytic, reminders and badges
Badges and gamification	• Icon and label • Pink accent for achieved badges
Themes	• Light and dark mode • Accent variations (pink gradient)

References

NC State University. (1997). Center for Universal Design. College of Design. https://design.ncsu.edu/research/center-for-universal-design/

Nielsen, J. (1994, April 24). 10 Heuristics for User Interface Design. Nielsen Norman Group. https://www.nngroup.com/articles/ten-usability-heuristics/

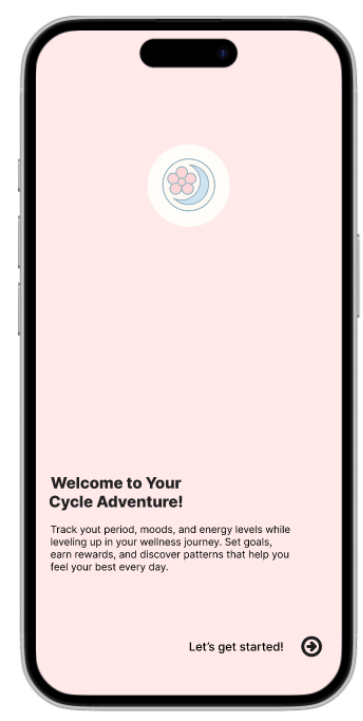
Norman, D. A. (2013). The design of everyday things: Revised and expanded edition. Basic Books.

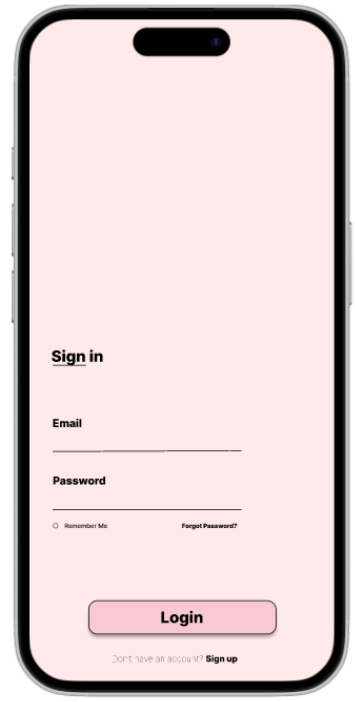
Appendices

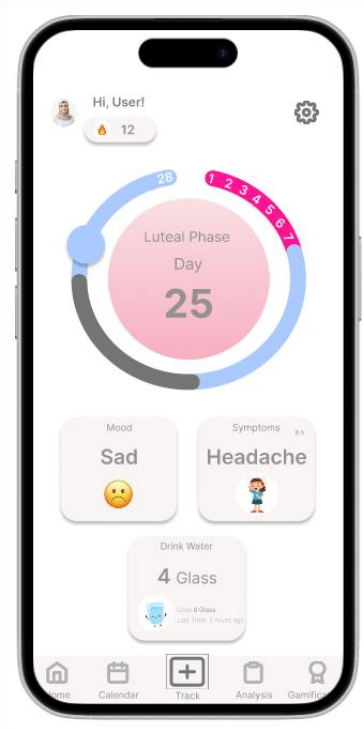
Team Contribution

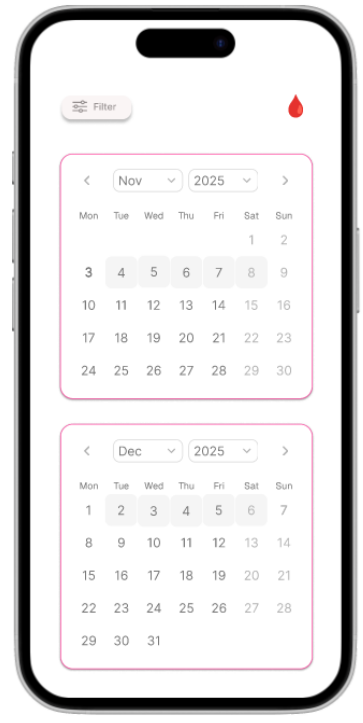
Name	Contribution
Abdul Aidil Azrie	- Group leader - Design Rationale Matrix
Genyvine Meryence	- Group co-leader - Mid-Fidelity Wireflow in Figma (Analytics Dashboard Page, Gamification Panel Page, Badges Page, and Themes Page)
Muhammad Zaheed Imran	- Active member - Mid-Fidelity Wireflow in Figma (Calendar Page, Logging Period Cycle Page, and Period Tracker Page)
Dayang Nurrafiqah	- Active member - Mid-Fidelity Wireflow in Figma (Splash Page, Login Page, Home Dashboard Page, Settings Page, and Reminders & Notifications Page)
Nabihah	- Active member - Simple Design System
See Sze Pei	- Active member - Personas and Scenarios

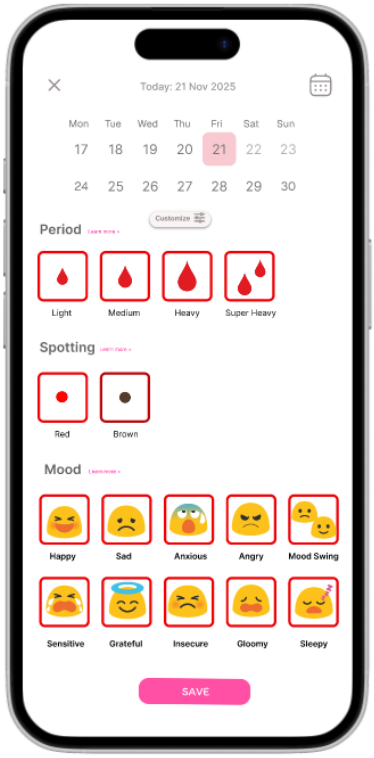
Mid-Fidelity Wireflow Pages

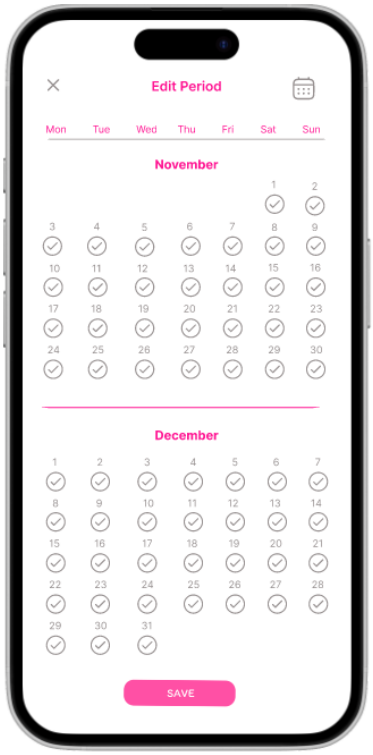


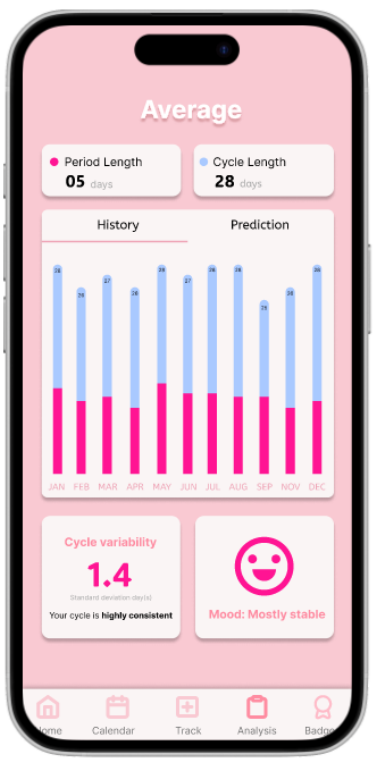


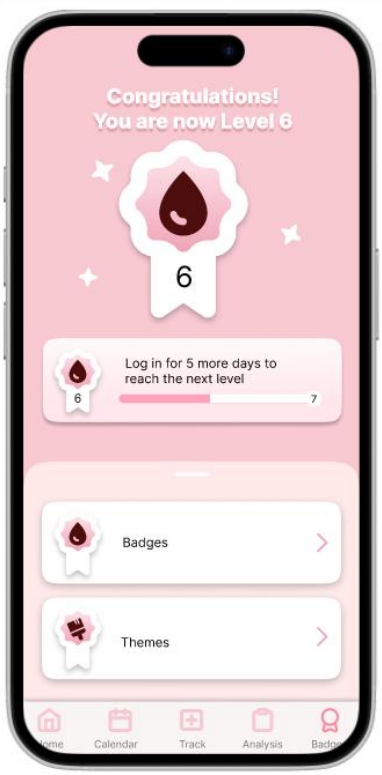


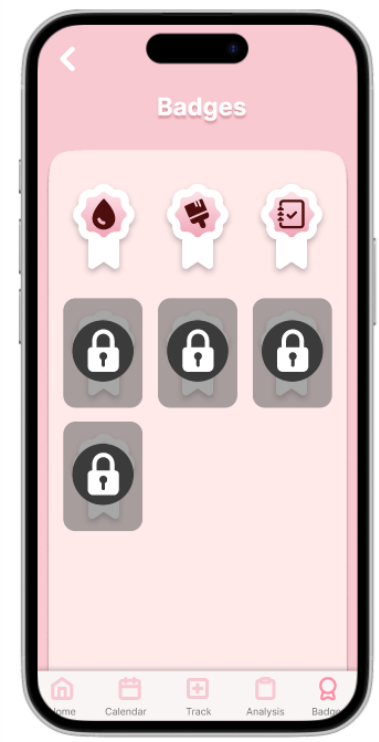


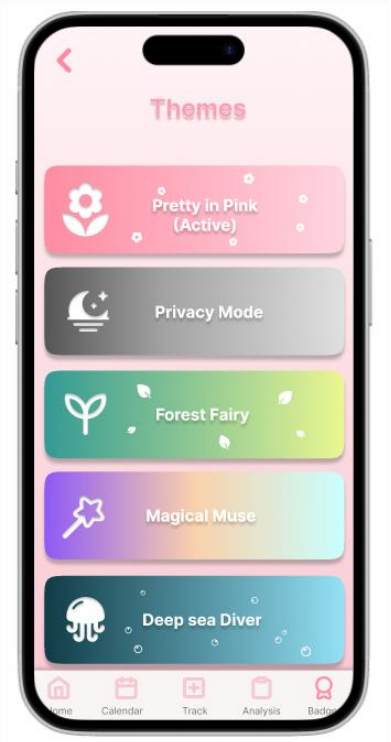

Today: 21 Nov 2025
Mon Tue Wed Thu Fri Sat Sun
17 18 19 20 21 22 23
24 25 26 27 28 29 30
Period
Customize
Light
Medium
Heavy
Super Heavy
Spotting
Red
Brown
Mood
Happy
Sad
Anxious
Angry
Mood Swing
Sensitive
Grateful
Insecure
Gloomy
Sleepy
SAVE

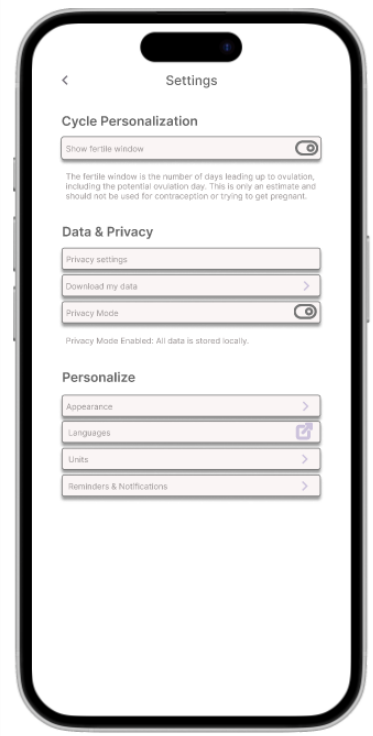

Edit Period
Mon Tue Wed Thu Fri Sat Sun
November
December
SAVE

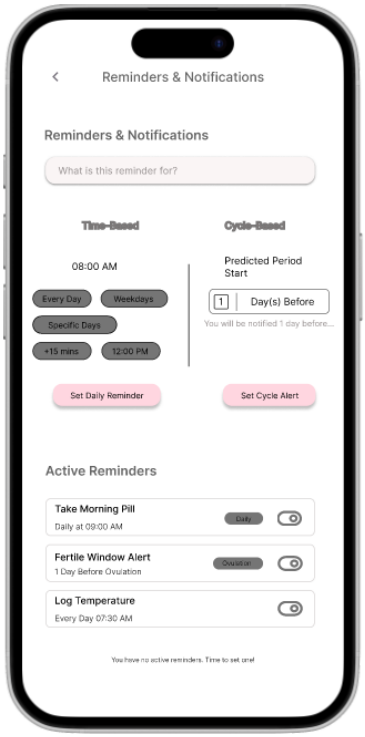

Average
Period Length
05 days
Cycle Length
28 days
History
Prediction
JAN FEB MAR APR MAY JUN JUL AUG SEP NOV DEC
Cycle variability
1.4
Your cycle is highly consistent
Mood: Mostly stable
Home
Calendar
Track
Analysis
Badges


Congratulations!
You are now Level 6
6
Log in for 5 more days to reach the next level
6
7
Badges
Themes
Home
Calendar
Track
Analysis
Badges


Badges
Home
Calendar
Track
Analysis
Badges

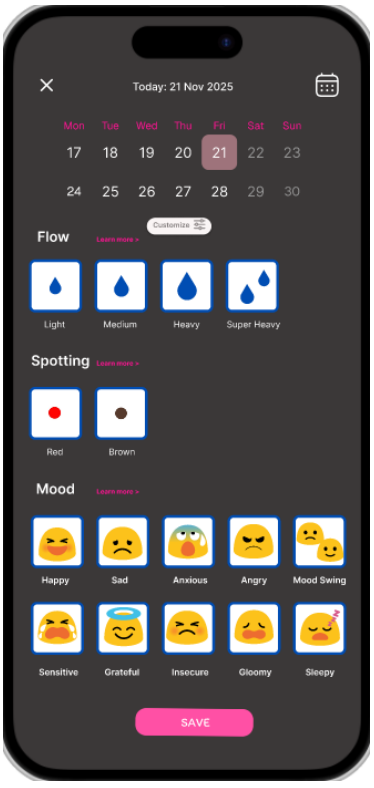

Themes
Pretty in Pink (Active)
Privacy Mode
Forest Fairy
Magical Muse
Deep sea Diver
Home
Calendar
Track
Analysis
Badges


Settings
Cycle Personalization
Show fertile window
The fertile window is the number of days leading up to ovulation, including the potential ovulation day. This is only an estimate and should not be used for contraception or trying to get pregnant.
Data & Privacy
Privacy settings
Download my data
Privacy Mode
Privacy Mode Enabled: All data is stored locally.
Personalize
Appearance
Languages
Units
Reminders & Notifications


Reminders & Notifications
Reminders & Notifications
What is this reminder for?
Time-Based
Cycle-Based
08:00 AM
Every Day
Weekdays
Specific Days
+15 mins
12:00 PM
Predicted Period Start
1
Day(s) Before
You will be notified 1 day before...
Set Daily Reminder
Set Cycle Alert
Active Reminders
Take Morning Pill
Daily at 09:00 AM
Daily
Fertile Window Alert
1 Day Before Ovulation
Ovulation
Log Temperature
Every Day 07:30 AM
You have no active reminders. Time to set one!


Reminder!
Your period will start in 2 days
28
1 2 3 4 5 6 7
Luteal Phase
Day
25
Accuracy
Within
1-2 days
Symptoms
Headache
Mood
Sad
Drink Water
4 Glass
Home
Calendar
Track
Analysis
Badge


Nov
2025
Mon Tue Wed Thu Fri Sat Sun
Dec
2025
Mon Tue Wed Thu Fri Sat Sun


Today: 21 Nov 2025
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Flow
Customize
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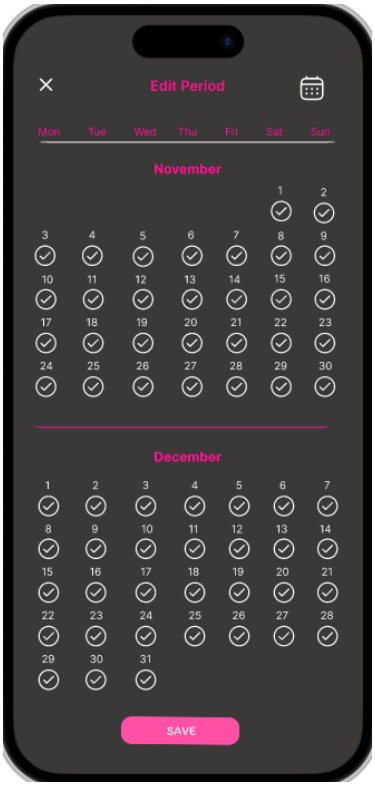
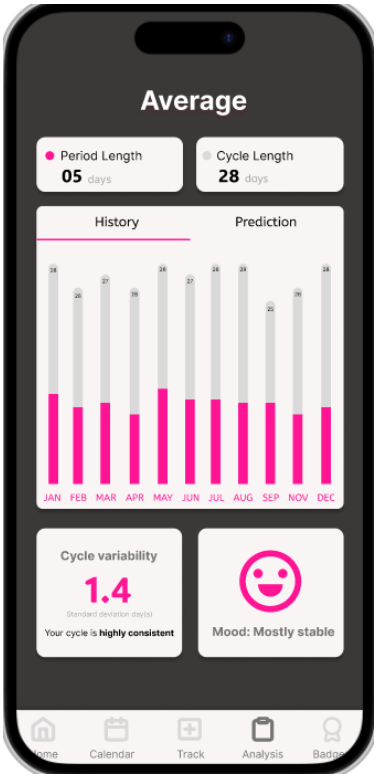

Edit Period
Mon Tue Wed Thu Fri Sat Sun
November
December
SAVE


Average
Period Length
05 days
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History
Prediction
JAN FEB MAR APR MAY JUN JUL AUG SEP NOV DEC
Cycle variability
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Your cycle is highly consistent
Mood: Mostly stable
Calendar
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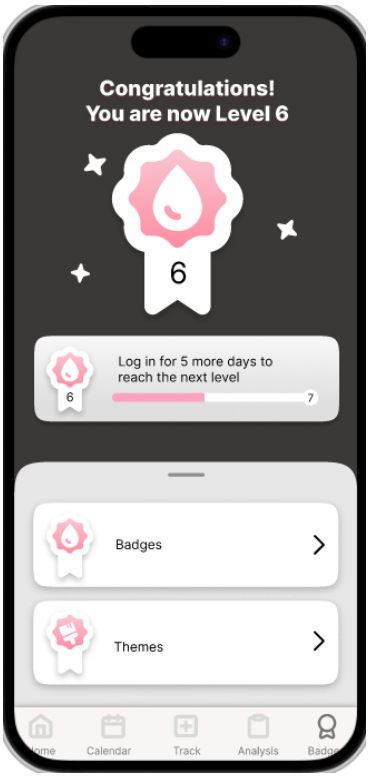
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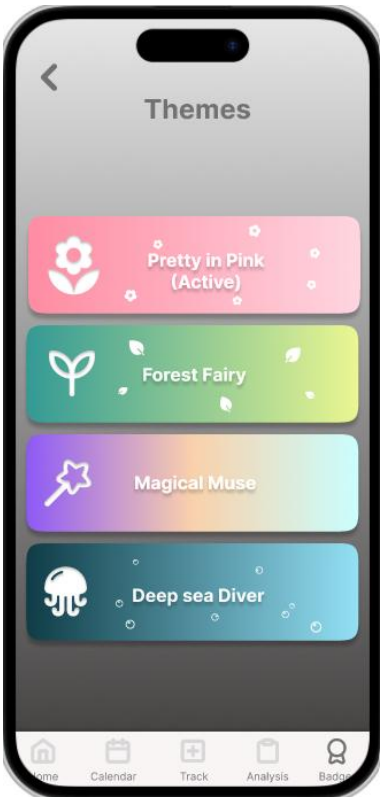
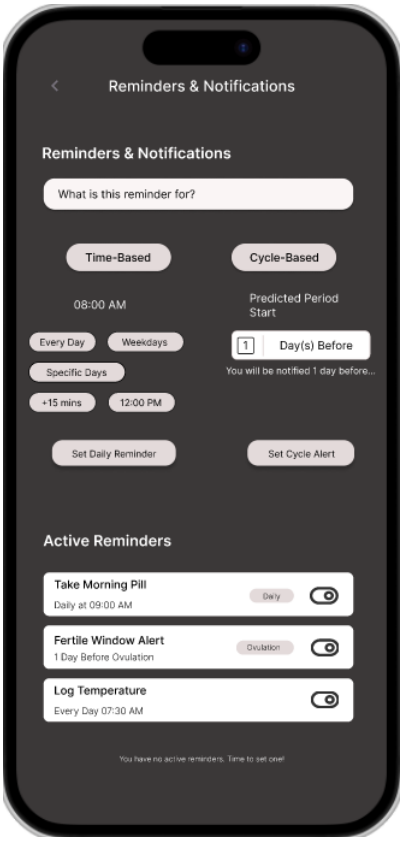
Badges
Themes
Calendar
Track
Analysis


Badges
Calendar
Track
Analysis


Themes
Pretty in Pink (Active)
Forest Fairy
Magical Muse
Deep sea Diver
Calendar
Track
Analysis


Settings
Cycle Personalization
Show fertile window
The fertile window is the number of days leading up to ovulation, including the potential ovulation day. This is only an estimate and should not be used for contraception or trying to get pregnant.
Data & Privacy
Privacy settings
Download my data
Privacy Mode
Privacy Mode Enabled: All data is stored locally.
Personalize
Appearance
Languages
Units
Reminders & Notifications


Reminders & Notifications
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What is this reminder for?
Time-Based
Cycle-Based
08:00 AM
Predicted Period Start
Every Day
Weekdays
Specific Days
1
Day(s) Before
You will be notified 1 day before...
+15 mins
12:00 PM
Set Daily Reminder
Set Cycle Alert
Active Reminders
Take Morning Pill
Daily at 09:00 AM
Daily
Fertile Window Alert
1 Day Before Ovulation
Ovulation
Log Temperature
Every Day 07:30 AM
You have no active reminders. Time to set one!