GlowCycle — Use Case Documentation

1. Overview

GlowCycle is a women's wellness web app that connects cycle tracking, mood journaling, and skin scanning to generate AI-powered personalized insights. It helps users understand how hormonal phases influence skin, mood, energy, and daily habits.

2. Problem

Women often use separate apps for period tracking, mood, and skincare. These tools don't connect the dots, so users struggle to understand:

- why mood/energy fluctuates across the month
- why hormonal acne appears at specific phases
- what actions to take day-to-day

This leads to frustration, inconsistent routines, and wasted spending on products that don't match their hormonal context.

3. Solution

GlowCycle creates a single, connected experience:

- **Cycle Tracking** → predicts phase, next period, ovulation window
- **Journal & Mood** → tracks feelings, energy, tags, time-of-day
- **Skin Scanner** → selfie-based analysis + skincare suggestions
- **AI Wellness** → generates daily guidance using combined user context

4. Primary Use Cases

UC-1: Period Cycle Tracking

Actor: User
Goal: Track periods and predict future phases
Main Flow:

1. User enters period start date (and optional cycle length).
2. System stores entry in DynamoDB.
3. System calculates:
    - cycle day + phase (menstrual/follicular/ovulation/luteal)
    - predicted next period + ovulation window
4. UI shows history + predictions.

Outcome: Cycle data stored and viewable; predictions available.

Business Value: Better planning, hormonal awareness, proactive health tracking.

UC-2: Daily Journal & Mood Tracking

Actor: User
Goal: Track mood, energy, notes to identify patterns
Main Flow:

1. User selects mood + energy (1–10).
2. User writes notes and adds tags.
3. System stores entry with timestamp in DynamoDB.
4. User reviews journal history and filters by tags/dates.

Outcome: Journal entries stored, available for correlation + AI insights.

Business Value: Pattern recognition, mental wellbeing support, cycle-linked insight.

UC-3: Skin Condition Tracking (Skin Scanner)

Actor: User
Goal: Upload selfie, get skin insights + track trends
Main Flow (clean + accurate):

1. User requests an upload URL (API call).
2. System returns an S3 presigned URL.
3. User uploads selfie directly to S3.
4. User triggers analysis request (API call with image key/date).
5. Skin Analyze Lambda:
    - reads image from S3
    - calls Rekognition (face region detection)
    - calls Bedrock (skin insight generation)
    - stores results in DynamoDB
6. UI displays results + history and links to cycle phase.

Outcome: Image in S3; results saved in DynamoDB; history visible over time.

Business Value: Understand hormonal skin patterns, improve skincare decisions, track progress.

UC-4: AI Wellness Support

Actor: User
Goal: Get personalized wellness guidance based on all tracked data
Main Flow:

1. User requests wellness insights.
2. System pulls context from DynamoDB:

    - cycle phase/day
    - last 7 days mood + energy trends
    - common tags/concerns
    - latest skin summary (if available)
3. System sends context to Bedrock (Claude model).
4. AI returns:
    - explanation of current hormonal phase
    - recommended actions (movement, nutrition, self-care)
    - supportive tone + motivation
5. UI displays insights; optionally saves response.

Outcome: Personalized advice delivered, consistent daily guidance.

Business Value: Scales expert-level wellness guidance, increases engagement and retention.

5. Secondary Use Cases

- **Pattern Insights Dashboard:** show mood/skin/energy trends by cycle phase
- **Cycle Education:** phase explanations + suggested routines
- **Dark Mode + Accessibility:** comfort, usability, WCAG alignment

6. Technical Summary (High Level)

Frontend: Static HTML/CSS/JS web app
Backend: API Gateway → Lambda (Python 3.11)
Data: DynamoDB stores period + journal + skin results
Images: S3 stores selfies
AI: Bedrock generates insights; Rekognition detects face regions
Security: Secrets Manager stores keys/config (if needed)

7. Success Metrics

Engagement: DAU, entries/week, feature adoption
Outcome: user-reported value, cycle prediction accuracy, skin trend tracking usage
Performance: API latency (<500ms for non-AI), uptime, upload success rate

8. Future Enhancements

Symptom tracking, fertility mode, proactive predictions (breakouts/mood dips), exportable reports, healthcare integration.

9. Conclusion

GlowCycle transforms tracking into **actionable insight** by connecting cycle + mood + skin into one AI-driven wellness companion. It reduces confusion, improves routine consistency, and helps users feel informed and supported throughout their cycle.