PeriodCare

Ai-Driven Menstrual Health Awareness & Support

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Problem statement

Menstrual health remains one of the most under-addressed public health challenges, especially in rural and underprivileged communities in India.

According to **UNICEF**:

- 71% of adolescent girls in India are unaware of menstruation before their first period.

- More than 23 million girls drop out of school every year due to inadequate menstrual support.

- Nearly 60% of menstruators lack access to safe menstrual hygiene products.

- Stigma, myths, and cultural taboos prevent open conversations, leading to shame and misinformation.

The **lack of menstrual education** leads to poor hygiene practices, infections, emotional distress, and a ripple effect on education, confidence, and opportunities.

Existing digital solutions often fail to reach rural users effectively because:

- They require high connectivity,

- Lack local language support,

- Don't offer **personalized menstrual guidance**, and

- Ignore cultural and emotional needs.

Proposed Solution

PeriodCare is an AI-powered web platform designed to address menstrual health gaps through personalized guidance, culturally sensitive education, and accessible technology.

🌐 **Key Features:**

1.Web-Based Platform:

- Works on any device with or without stable internet. Simple UI for rural and urban users.

2.AI-Powered Chatbot:

Provides personalized menstrual health support including:

- 🥗 Diet recommendations during each phase of the cycle.

- 🧘 Exercise and lifestyle tips.

- 👗 Comfortable clothing suggestions.

- 💊 Pain management strategies and emotional support.

- 🧼 Hygiene guidance and do's/don'ts.

3.Education Module:

- Clear explanations of the menstrual cycle in local languages.

- Myth-busting content designed with cultural sensitivity.

- Visual learning using diagrams and short lessons.

4.Offline & Low Bandwidth Mode:

- Allows users in rural or low-connectivity areas to access content seamlessly.

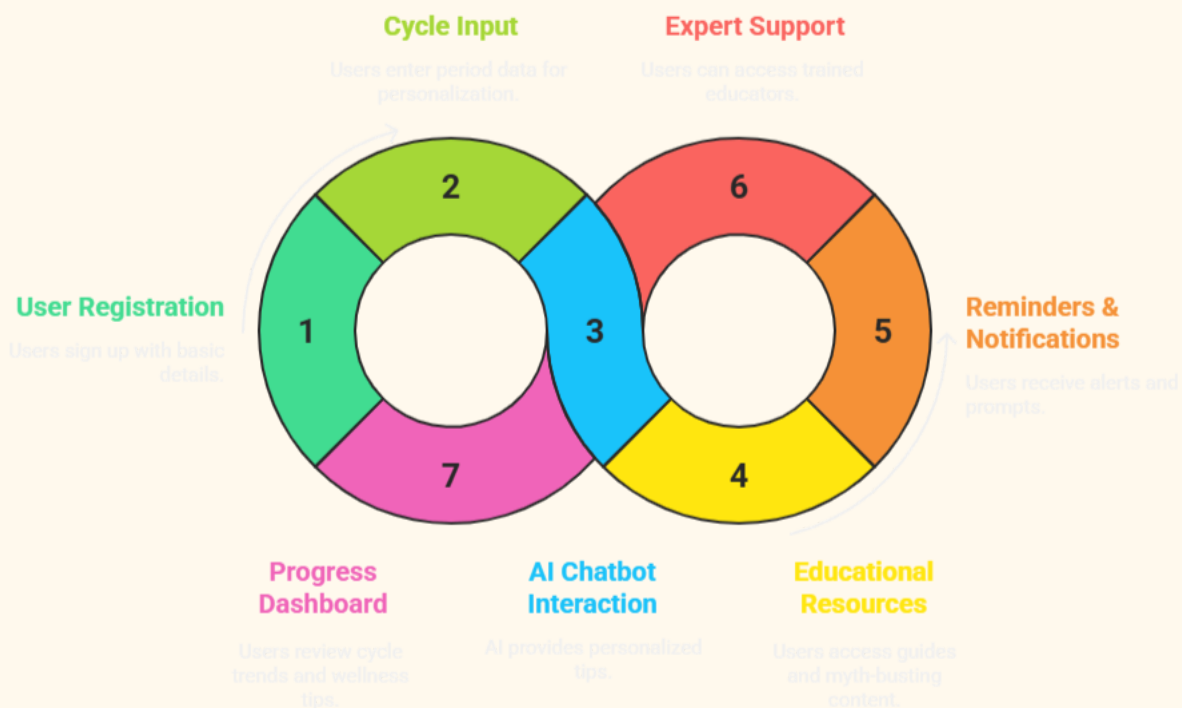5.Parental and Community Involvement:

- Modules for parents and community workers to create open conversations.

6.Data Privacy:

- Anonymized data, encrypted user information,no tracking of personal identity.

Workflow of the Solution

Cycle Input — Users enter period data for personalization.

Expert Support — Users can access trained educators.

User Registration — Users sign up with basic details.

Reminders & Notifications — Users receive alerts and prompts.

Progress Dashboard — Users review cycle trends and wellness tips.

AI Chatbot Interaction — AI provides personalized tips.

Educational Resources — Users access guides and myth-busting content.

🧭 Step-by-Step Flow of PeriodCare:

1.User Registration/Login →

- Simple sign-up (name, age group, language preference).

2.Cycle Input & Personalization →

- User adds basic period data; AI model personalizes experience.

3.AI Chatbot Interaction →

- Personalized tips (diet, exercise, hygiene, pain management).

4.Educational Resources →

- Interactive guides, cycle diagrams, cultural myth-busting content.

5.Reminders & Notifications →

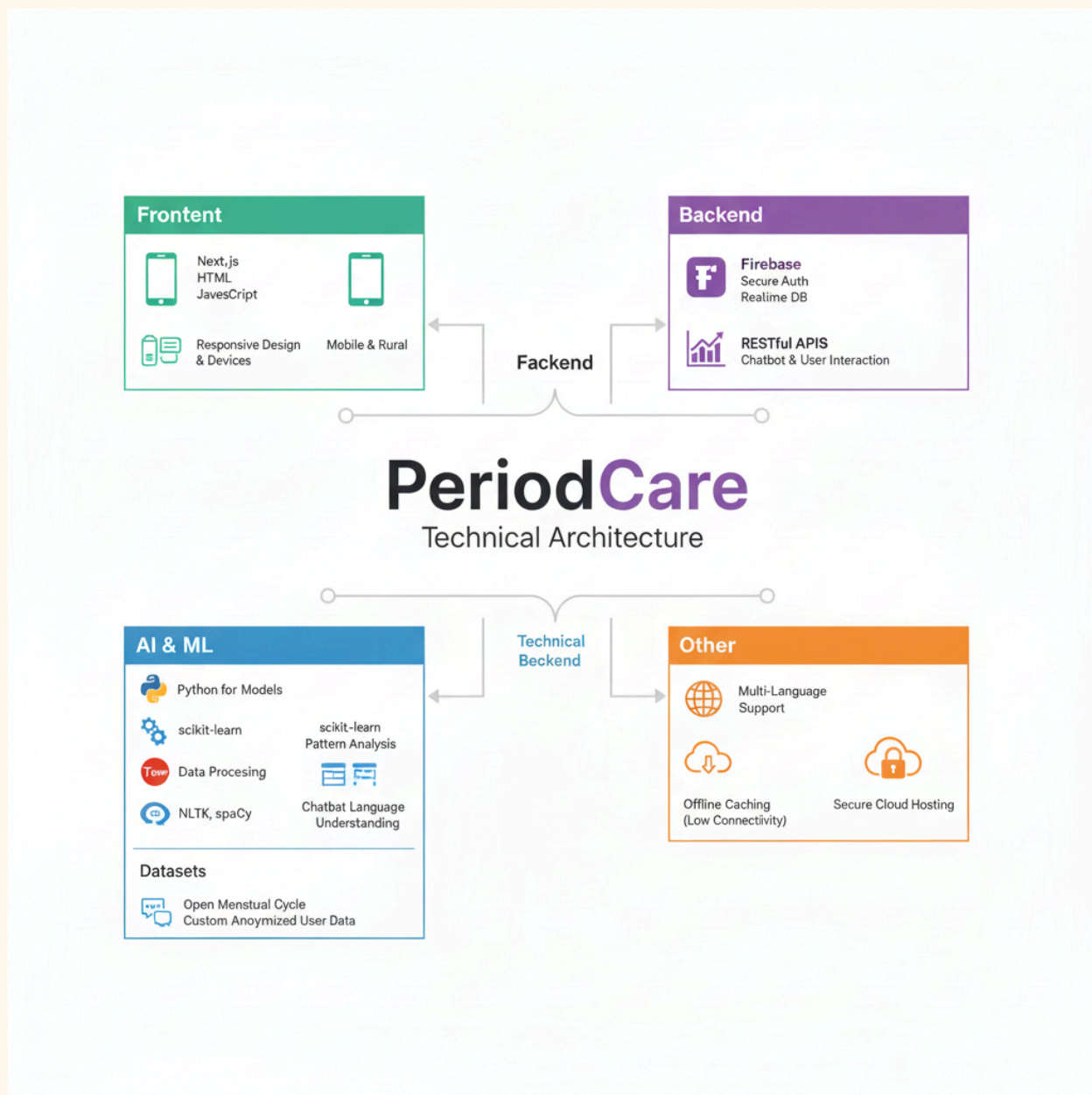- Period prediction alerts, hygiene reminders, mood tracking prompts.

6.Expert Support (Optional) →

- Access to trained educators or health workers.

7.Progress Dashboard →

- User gets insights on their cycle trends and wellness tips.

Technologies Used

1.Frontend:

- Next.js, HTML, CSS, JavaScript

- Responsive design optimized for mobile and rural devices.

2.Backend:

- Firebase for secure authentication and real-time database.

- RESTful APIs for seamless chatbot and user interaction.

AI & ML:

- Python for building predictive and NLP models.

Libraries:

- TensorFlow – cycle prediction models

- scikit-learn – pattern analysis

- Pandas, NumPy – data processing

- NLTK, spaCy – chatbot language understanding

Datasets:

- Open menstrual cycle datasets + anonymized user data.

- Custom dataset for personalized insights (diet, exercise, emotional states).

Other:

- Multi-language support modules

- Offline caching for low connectivity

- Secure cloud hosting

Comparison: Existing vs PeriodCare

Feature	Existing Apps	PeriodCare
⏱ Period Tracking	Basic tracking	Advanced AI prediction + personalized support
☹ Cultural Sensitivity	Mostly global	Localized content & language support
Personalized Diet & Exercise Tips	Limited or none	Fully integrated AI chatbot
Offline Access	No	Yes, for rural reach
Emotional Support	Minimal	Included with tips & chatbot interaction
Education & Myth Busting	Partial	Comprehensive and localized
Privacy & Security	Varies	Strong encryption + anonymized data
Expert & Community Modules	No	Yes

Impacts & Expected Outcomes:

PeriodCare aims to bring measurable improvements in menstrual health education and confidence:

- 📈 Increase menstrual awareness by 50% in pilot communities within 12 months.

- 🏫 Reduce school absenteeism by 30%, helping girls continue their education.

- 🧼 Improve hygiene practices and reduce infection risks through better knowledge.

- 🌍 Empower rural communities with culturally relevant education.

- 🧠 Strengthen mental and emotional well-being during menstrual cycles.

- 👩‍⚕️ Enable health workers and parents to support menstruators more effectively.

Long-term Impact:

- Normalizing conversations around menstruation.

- Bridging the gender inequality gap in education.

- Creating data-backed insights for future policy and health programs.

Uniqueness:

- Personalized Experience: Unlike generic trackers, PeriodCare uses AI to provide cycle-specific diet, clothing, and lifestyle tips.

- Cultural & Language Localization: Content is adapted for rural communities, breaking barriers of language and taboo.

- Offline Accessibility: Designed to work even in low-connectivity regions.

- Educational First: Combines health education, emotional support, and practical guidance in one platform.

- Community Integration: Includes parental and NGO involvement to normalize conversations.

- Secure & Ethical: Prioritizes data privacy and user trust.

References:

- UNICEF — Menstrual Hygiene Reports

- World Health Organization — Menstrual Health Guidelines

- Government of India — Menstrual Hygiene Scheme (2011)

- Oky, Clue, Sahej, Menstrupedia — existing app research

- Menstrual Health Apps and Government Schemes

- Technology and AI Integration in Menstrual Health