



Women's Health Dashboard

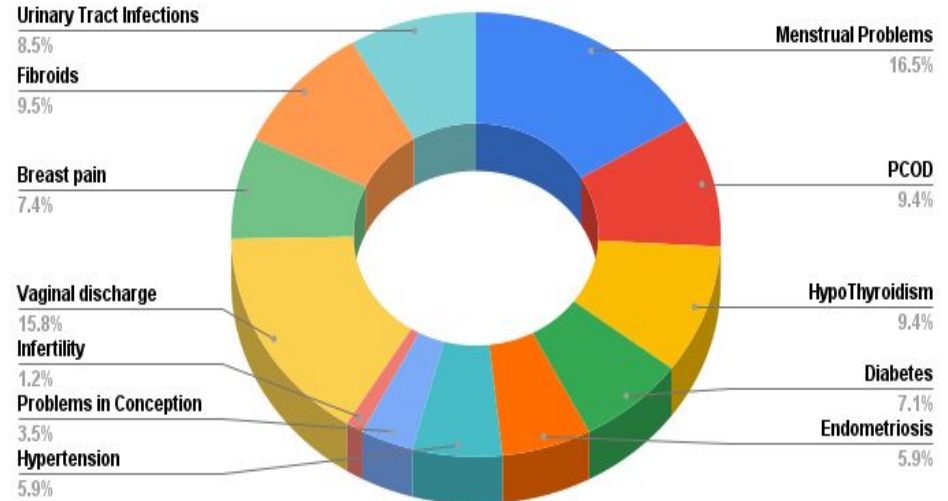
*- Empowering Women Through Data-Driven
Health Insights*

Team: Varsha
Submitted for: GUVI Shecodes Hackathon

Problem Statement

Analyze datasets related to women's health (e.g., maternal health, menstrual cycle patterns, mental well-being) to derive insights and predictions. Build data visualizations and predictive models to improve awareness and healthcare access.

Top 12 Women's Health Issues In 2022



Introduction

The Women's Health Dashboard is a comprehensive tool designed to empower women by providing insights and predictions related to:

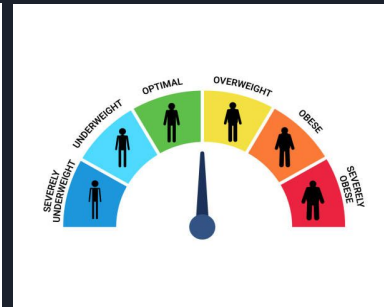
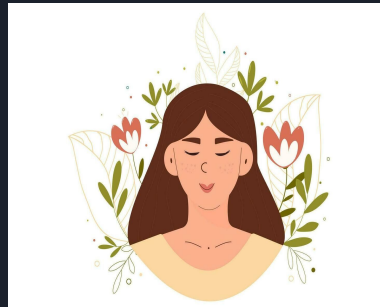
- Maternal health
- Menstrual cycles
- Mental well-being
- BMI and hydration tracking
- Built using Streamlit and machine learning models.



**Women Wellness and
How to Achieve It?**

Key Features

- 01 Maternal Health Predictor
- 02 Menstrual Cycle Predictor
- 03 Mental Well-being Predictor
- 04 BMI Calculator
- 05 Hydration Tracker
- 06 Data Visualizations



Technical Implementation

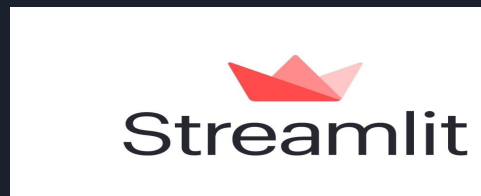
Frontend: Streamlit, HTML/CSS

Backend: Python, Pandas, NumPy

Machine Learning: Scikit-learn, Joblib

Data Visualization: Matplotlib, Seaborn

Deployment: Streamlit Sharing





Design and Architecture

The project follows a modular and user-centric design approach:

- 1. User Interface (UI):** - The dashboard is designed with a clean and intuitive interface.
 - Custom CSS is used to style the sidebar and navigation menu for better user experience.
 - Interactive input fields and buttons allow users to input data and receive predictions.
- 2. Data Flow:** - User inputs are collected through Streamlit widgets.
 - Input data is processed using Python and passed to the respective machine learning models.
 - Predictions and recommendations are displayed dynamically on the dashboard.
- 3. Machine Learning Models:** - Maternal Health Model: Predicts risk levels based on health metrics.
 - Menstrual Cycle Models: Predict regularity and ovulation dates.
 - Mental Health Model: Assesses mental well-being based on survey data.
- 4. Data Visualizations:** - Visualizations are created using Matplotlib and Seaborn.
 - Graphs include box plots for maternal health factors, histograms for menstrual cycle lengths, and count plots for mental health trends.

Home Page

Navigation

Go to

Home

Maternal Health

Menstrual Cycle

Mental Well-being

BMI Calculator

Hydration Tracker

Deploy


Women's Health Dashboard

Welcome to the Women's Health Dashboard! Use the sidebar to navigate to different sections.



Women Wellness and How to Achieve It?

Empowering Women Through Health Awareness



Data Analytics for Women's Health Awareness

1. Maternal Health Risk Analysis

How each factor contributes to high-risk maternal health:

Distribution of Factors Contributing to High-Risk Maternal Health

Windows Taskbar

System Tray

11:55

09-03-2025

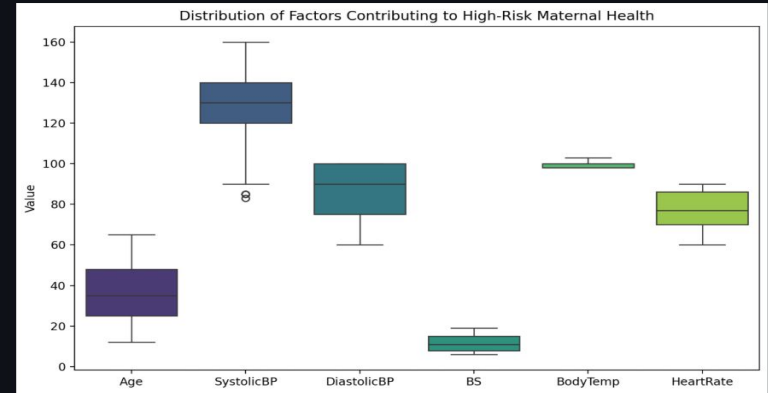
Data Visualizations

Visualizations include:

- Maternal health risk factors.
- Menstrual cycle length distribution.
- Mental health trends.

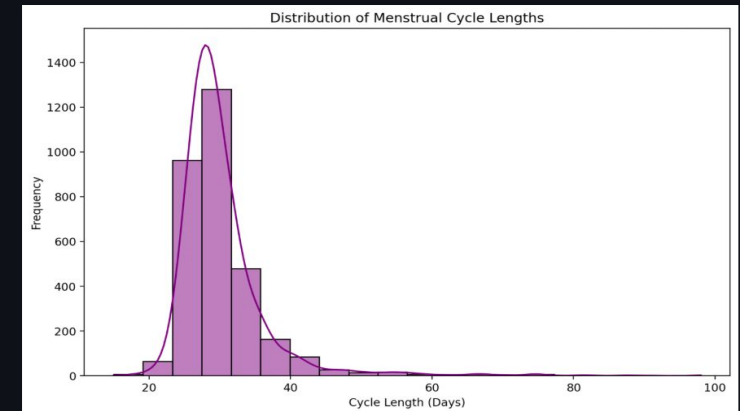
1. Maternal Health Risk Analysis

How each factor contributes to high-risk maternal health:



2. Menstrual Health Analysis

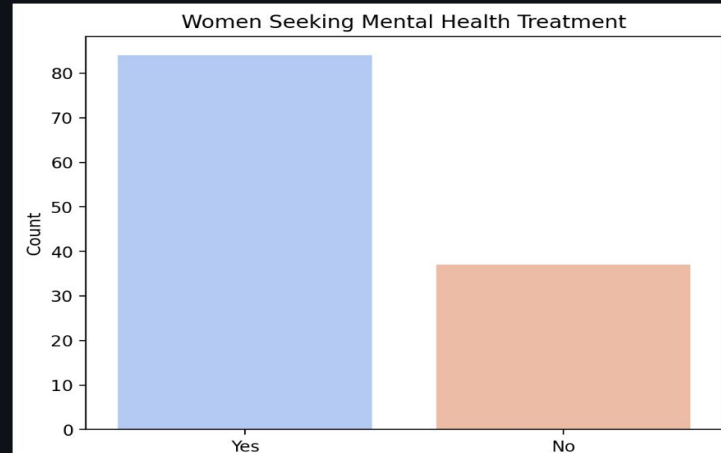
Distribution of Menstrual Cycle Lengths:



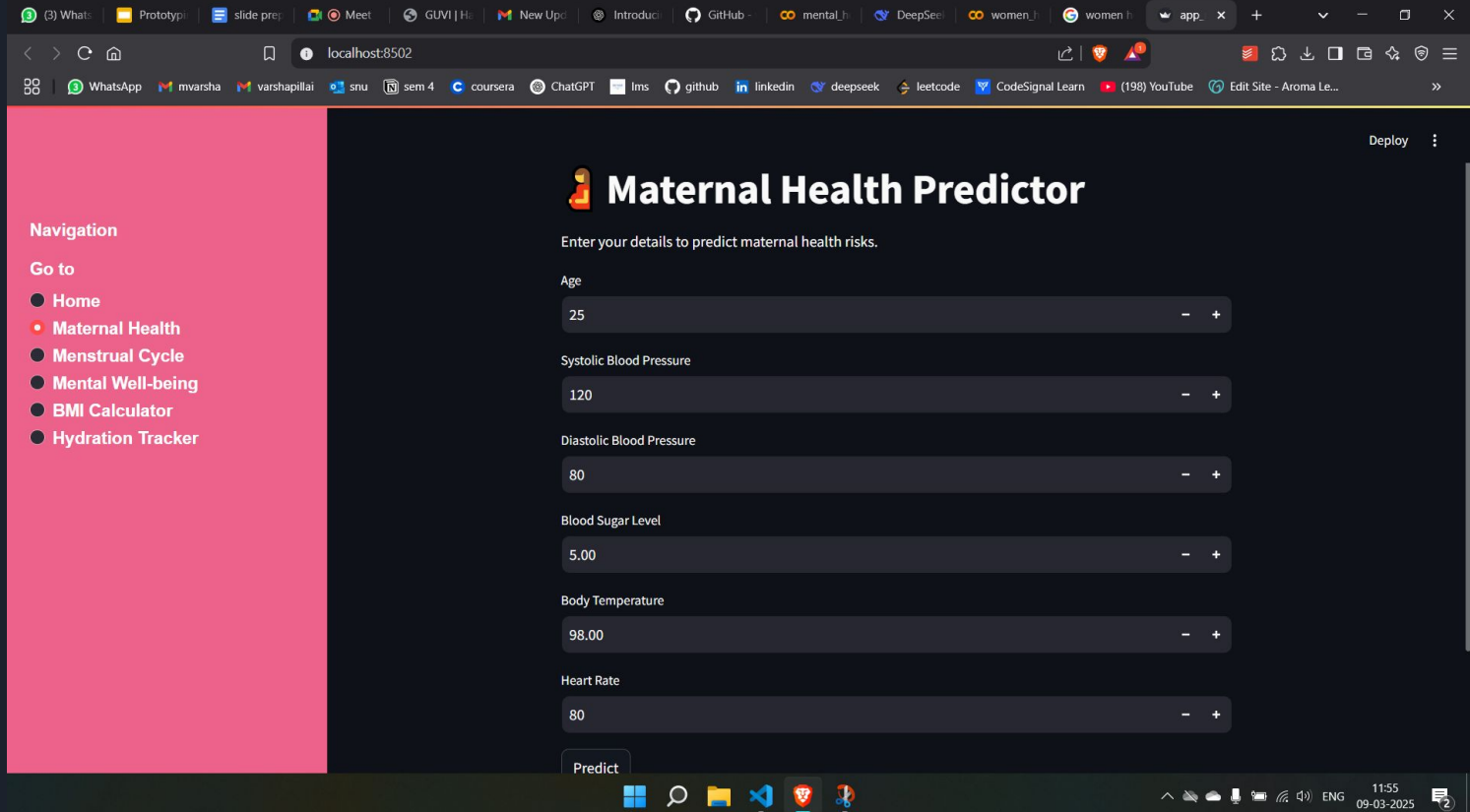
This graph shows the distribution of menstrual cycle lengths among women.

3. Mental Health Analysis

Number of women affected by mental health diseases:



Maternal Health Page



The screenshot displays a web browser window with the address bar showing `localhost:8502`. The browser's tab bar contains several open tabs, including WhatsApp, Prototyping, slide pre, Meet, GUVI | H, New Upd, Introduc, GitHub, mental_h, DeepSee, women_j, and women h. The application running in the browser is titled "Maternal Health Predictor" and is located at `localhost:8502`. The application interface consists of a pink sidebar on the left and a main content area on the right. The sidebar contains a "Navigation" section with a "Go to" heading and a list of links: Home, Maternal Health (highlighted with a red dot), Menstrual Cycle, Mental Well-being, BMI Calculator, and Hydration Tracker. The main content area features a heading "Maternal Health Predictor" with a pregnant woman icon, followed by the instruction "Enter your details to predict maternal health risks." Below this, there are seven input fields for various health metrics: Age (25), Systolic Blood Pressure (120), Diastolic Blood Pressure (80), Blood Sugar Level (5.00), Body Temperature (98.00), Heart Rate (80), and a "Predict" button. The browser's taskbar at the bottom shows the Windows logo, a search icon, and several application icons, along with the system clock displaying 11:55 on 09-03-2025.

Navigation

Go to

- Home
- Maternal Health
- Menstrual Cycle
- Mental Well-being
- BMI Calculator
- Hydration Tracker

Maternal Health Predictor

Enter your details to predict maternal health risks.

Age

25 - +

Systolic Blood Pressure

120 - +

Diastolic Blood Pressure

80 - +

Blood Sugar Level

5.00 - +

Body Temperature

98.00 - +

Heart Rate

80 - +

Predict

Menstrual Cycle Page

Navigation

- Go to
- Home
- Maternal Health
- Menstrual Cycle
- Mental Well-being
- BMI Calculator
- Hydration Tracker

Menstrual Cycle Predictor

Enter your details to predict menstrual cycle regularity, ovulation date, and next cycle date.

Age

25

Cycle Length (in days)

28

Cycle Start Day

15

Cycle Start Month

5

Cycle Start Year

2023

Select your symptoms

Choose an option

Predict


Mental Well Being Page

Navigation

Go to

- Home
- Maternal Health
- Menstrual Cycle
- Mental Well-being
- BMI Calculator
- Hydration Tracker

Deploy



Mental Well-being Predictor

Enter your details to assess your mental well-being.

Age

30 - +

Do you have a family history of mental health issues?

No ▾

Does work interfere with your mental health?

Never ▾

Do you have mental health benefits?

No ▾

Do you seek help for mental health?

No ▾

Is anonymity protected in your mental health programs?

No ▾

Does discussing mental health have consequences at work?

11:56
09-03-2025

BMI Calculator Page

The screenshot shows a web browser window with the address bar displaying 'localhost:8502'. The browser's tab bar includes several open tabs, and the address bar shows various search engines and social media links. The web application has a dark theme and a sidebar on the left with a pink background. The sidebar contains a 'Navigation' section with a 'Go to' list: Home, Maternal Health, Menstrual Cycle, Mental Well-being, BMI Calculator (highlighted with a red dot), and Hydration Tracker. The main content area is dark and contains the following text and form elements:

Calculate your Body Mass Index (BMI) and get personalized recommendations.

Select height unit:

- ☒ Centimeters (cm)
- ☐ Meters (m)

Enter your height (in cm):

160

Select weight unit:

- ☒ Kilograms (kg)
- ☐ Pounds (lbs)

Enter your weight (in kg):

60

Calculate BMI

Your BMI is: 23.44

Category: Normal Weight

Recommendations:

The browser's taskbar at the bottom shows the Windows logo, search icon, and several application icons. The system tray on the right shows the date and time as 12:58 on 09-03-2025, along with network and volume icons.

Hydration Tracker Page

Navigation

Go to

- Home
- Maternal Health
- Menstrual Cycle
- Mental Well-being
- BMI Calculator
- Hydration Tracker

Track your daily water intake and stay hydrated!

Daily Water Intake Recommendation

Enter your weight (in kg):

Select your activity level:

Sedentary

Your recommended daily water intake is 1800 mL.

Track Your Water Intake

Log how much water you've consumed today:

Enter the amount of water consumed (in mL):

Press Enter to apply

Remaining water to drink today: 800 mL.

You've consumed 55.6% of your daily goal.



Benchmarks and Performance

Maternal Health Model:

```
# Print results
print(f'Accuracy: {accuracy * 100:.2f}%')
print(f'F1-Score: {f1 * 100:.2f}%')
print(f'Precision: {precision * 100:.2f}%')
```



```
Accuracy: 81.28%
F1-Score: 81.34%
Precision: 81.85%
```



Benchmarks and Performance

Mental Health Model:

```
Accuracy: 0.8085106382978723
```

```
Classification Report:
```

	precision	recall	f1-score	support
No	0.56	0.82	0.67	11
Yes	0.94	0.81	0.87	36



Prototype Summary:

1. Home Page: - Overview of the dashboard and navigation options.
 - Graphs and analytics of women's health.
2. Maternal Health Page: - Input fields: Age, Blood Pressure, Blood Sugar, Body Temp, Heart Rate.
 - Output: Risk Level and Recommendations.
3. Menstrual Cycle Page: - Input fields: Age, Cycle Length, Cycle Start Date, Symptoms.
 - Output: Cycle Regularity, Ovulation Date, and Recommendations.
4. Mental Well-being Page: - Input fields: Age, Stress Level, Sleep Hours, Social Support, Mood.
 - Output: Mental Health Score and Recommendations.
5. BMI Calculator Page: - Input fields: Height, Weight.
 - Output: BMI and Recommendations.
6. Hydration Tracker: - Input fields: Weight, Activity level
 - Output: Optimal water level, progress bar and recommendations.



Future enhancements:

- Integrate more datasets and increase accuracy.
- Add multilingual support to target a wide range of women even in rural areas.
- Develop as a mobile app integrate into smart devices like smartwatches.
- Incorporate real-time health monitoring.
- Add LLM based chatbot for better interaction and user experience.
- User profiling to enhance personalisation.



Conclusion

The Women's Health Dashboard is a powerful tool that leverages data analytics and machine learning to improve women's health awareness and access to healthcare. By providing personalized predictions, recommendations, and visualizations, the dashboard empowers women to take control of their health. The project aligns perfectly with the hackathon's problem statement and demonstrates the potential of technology to drive positive change in healthcare.



Acknowledgments

1. Scikit-learn Documentation: <https://scikit-learn.org/>
2. Streamlit Documentation: <https://docs.streamlit.io/>
3. Kaggle Datasets: <https://www.kaggle.com/datasets>