Problem Statement:

Generate HIPAA-compliant synthetic data for disease prediction and assistance.

Med-Data-Synth

The proposed solution is a two-part system integrating Synthetic Data Generation and a Symptom-Based Disease Prediction Chatbot

Synthetic Data Generationization

Ensure HIPAA compliance with robust privacy-preserving techniques such as differential privacy and anonymization.

Enable scalable training for predictive models while maintaining patient confidentiality.

Symptom-Based Disease Prediction Chatbot

Leverage Natural Language Processing (NLP) to create an intelligent chatbot for disease prediction.

Collect user-reported symptoms and provide accurate predictions powered by AI models.

Performance Metrics

Automate the synthetic data pipeline to handle large-scale datasets effortlessly.

Seamlessly integrate with existing healthcare IT systems for practical, real-world applications.

Automation

Use advanced metrics to validate the quality of synthetic data and model accuracy.

Regularly benchmark against real-world datasets to ensure effectiveness and compliance.

WHAT SETS OUR PROJECT APART

Synthetic Data Advantage:

Unlike traditional anonymization methods, synthetic data retains statistical properties without risking exposure of sensitive information.

User-Friendly

Use of Streamlit for an intuitive interface ensures accessibility for healthcare professionals and researchers without requiring technical expertise.

Privacy

Direct user data usage is avoided, complying with HIPAA regulations, ensuring data privacy and security while enabling healthcare advancements.

Users upload healthcare datasets securely.

SDV/GANs generate realistic, privacy-compliant data.

NLP processes symptoms to predict diseases accurately.

USERS ACCESS DATA AND CHATBOT RESULTS VIA STREAMLIT.

AI-Powered Predictions

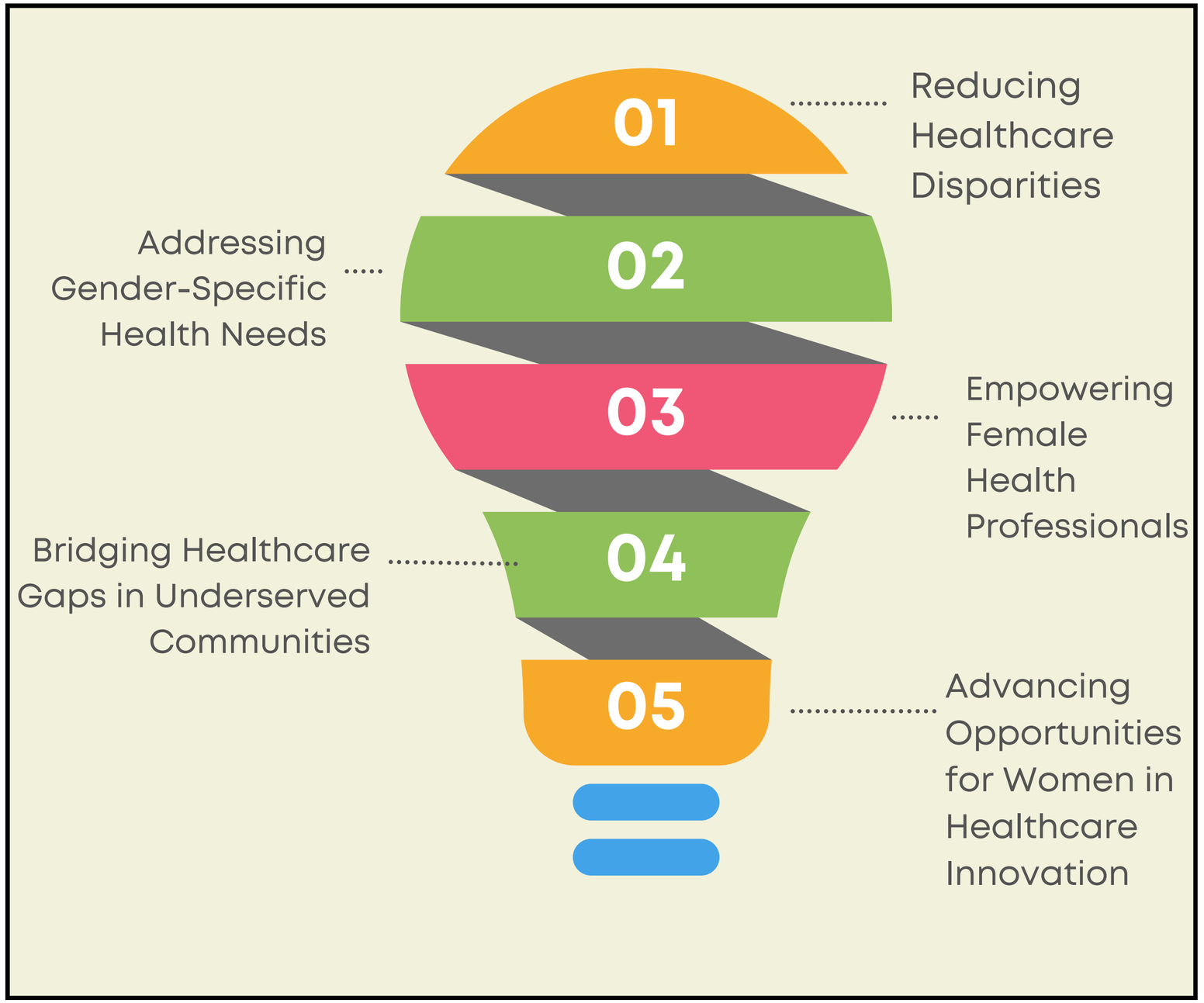
Advanced NLP-based chatbot enhances usability by offering accurate disease predictions from symptoms in natural language.

Future-Ready

Scalable for multilingual support, voice input, and enhanced medical decision-making tools for professionals.

Dual Functionality:

Combines synthetic data generation and disease prediction chatbot in a single platform for research and practical use.



Empowering Women Through Med-Data-Synth

Tech Stack