MEDIGUIDE

Personalized Healthcare Assistant

By Himanshu Nagapure

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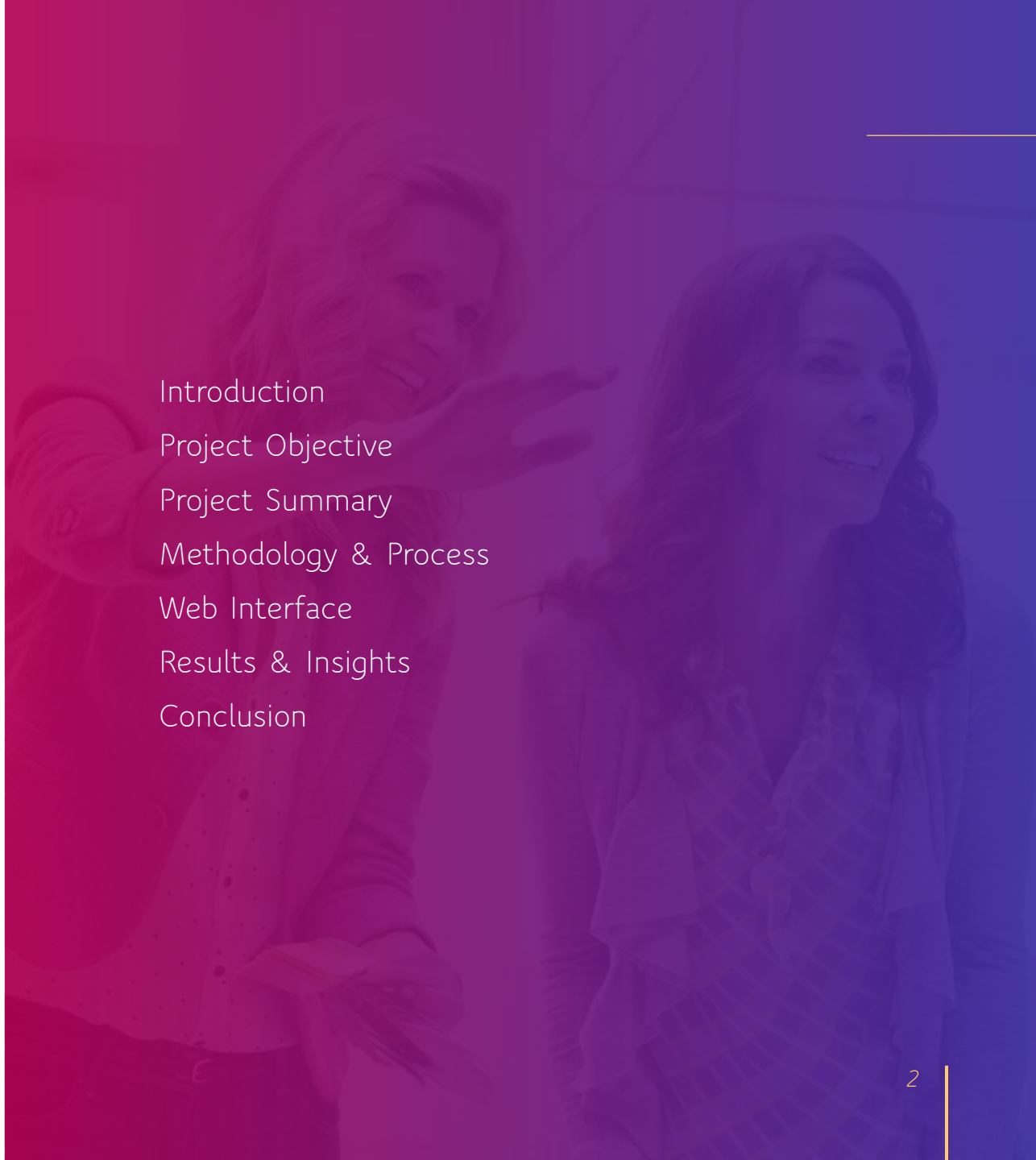


INTRODUCTION

MediGuide is a **data-driven personalized healthcare recommendation system** designed to assist users in managing their health by providing customized **medications, diet plans, workouts, and precautions** based on their symptoms. By leveraging machine learning and structured data, MediGuide ensures accurate, **reliable, and user-friendly health insights**.

OBJECTIVE

The primary goal of MediGuide is to **empower individuals with data driven health recommendations** that are tailored to their symptoms. The system bridges the gap between general medical knowledge and personalized healthcare by offering real-time, data-driven suggestions.

SUMMARY

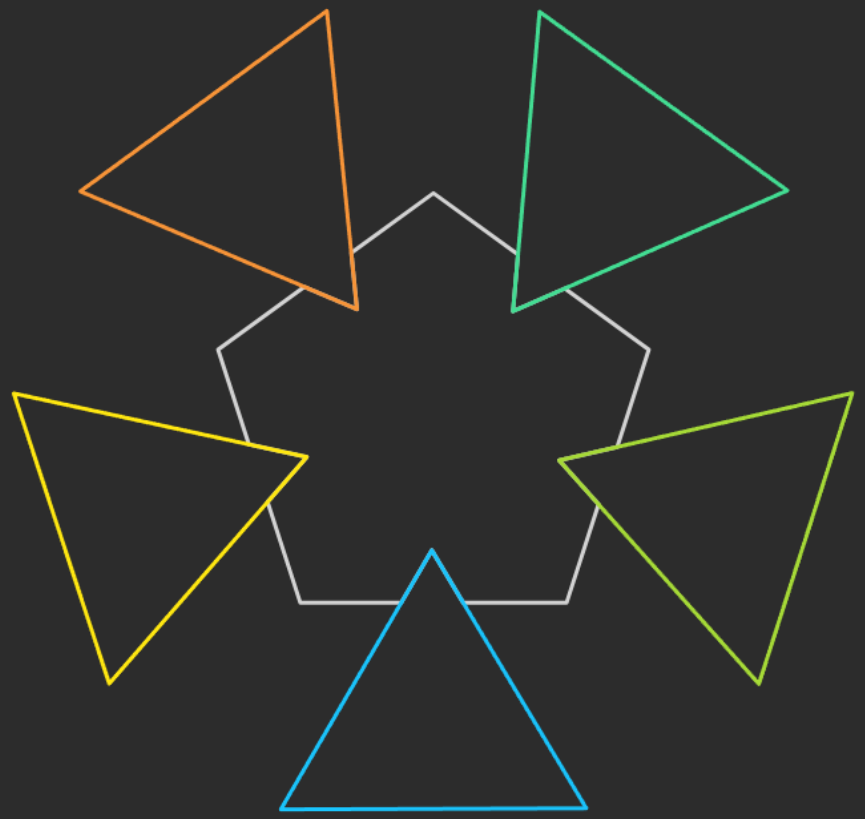
MediGuide collects and analyzes health-related data from users to generate customized recommendations. Data in this project is downloaded from Kaggle. The system processes symptoms, cross-references with historical medical data, and provides:

- **Disease Prediction** based on data.
- **Precautionary measures** to prevent worsening conditions.
- **Suitable medications** based on general prescriptions.
- **Dietary recommendations** to enhance recovery and boost immunity.
- **Workout plans** tailored for maintaining a healthy lifestyle.

⚠️ **Disclaimer**: MediGuide is not a replacement for professional medical advice. Always consult a healthcare provider for a proper diagnosis.

Methodology & Process

Components of a Personalized Health Recommendation System



Data Collection

Gathering comprehensive health-related data for analysis

Model Training

Training a classification model with structured data

Data Processing

Matching user symptoms with the dataset for insights

Recommendation Generation

Providing personalized health recommendations

User-Friendly Interface

Streamlit-powered website for easy user interaction

Methodology & Process

The development of **MediGuide** followed a **structured, data-driven approach**:

1. Data Collection & Preprocessing

- Medical datasets were sourced from Kaggle, cleaned, and structured into **CSV files**.
- A dataset containing symptoms, medication details, diet plans, precautions, and workout routines is used.

2. Machine Learning Model Development

- Applied **Supervised Learning Algorithms**: **Support Vector Machine (SVM)** for **multi-class disease classification**.
- **Training Dataset**: Contained **symptom-disease relationships** with historical data.
- **Model Evaluation**: Used **precision, recall, and F1-score** to assess performance.

3. Data Processing

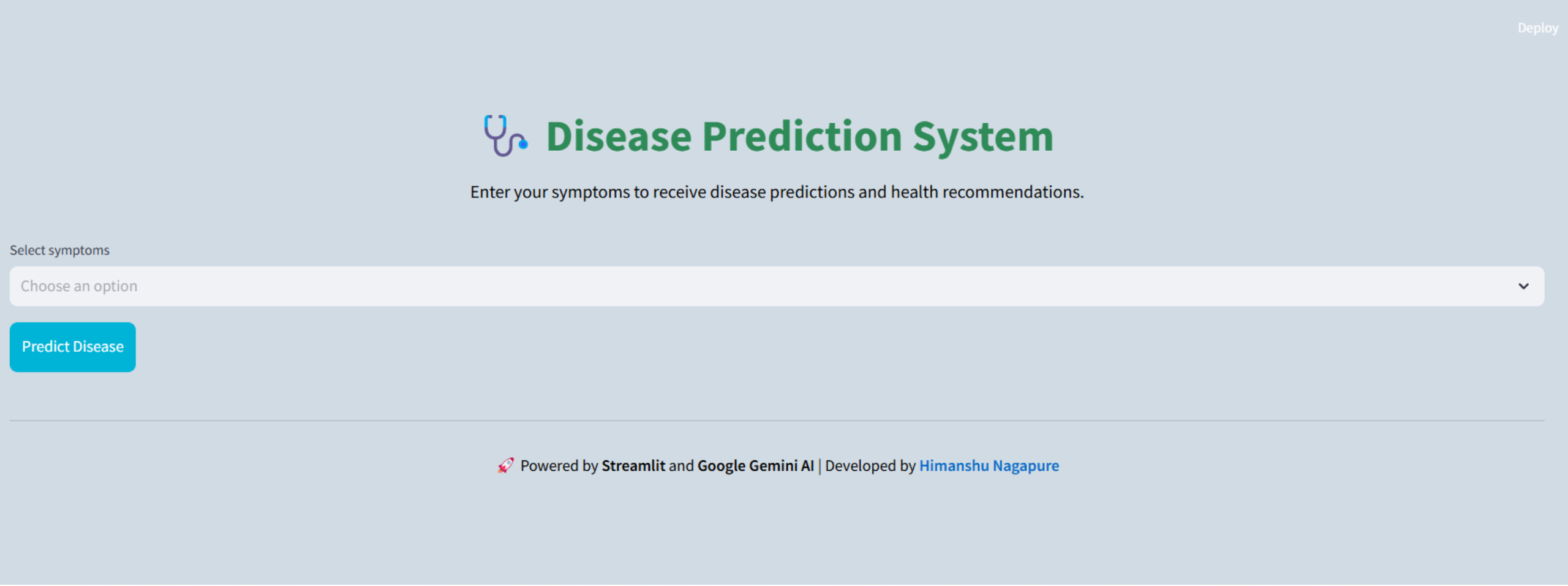
User-input symptoms are matched with the dataset.

4. Recommendation System Development

- **Medications** – Linked disease predictions with suitable medical treatments.
- **Diet Plans** – Suggested **nutrient-rich foods** for faster recovery.
- **Workout Plans** – Designed **exercise routines** based on health conditions.
- **Precautions** – Displayed necessary **preventive measures**.

5. User Interface Development

- Used **Streamlit** to create a **simple and intuitive UI**.
- Allowed users to **enter symptoms and get instant results**.



WEB INTERFACE

HOME SCREEN

Predicted Disease: Drug Reaction

Drug Reaction occurs when the body reacts adversely to a medication.

🛡️ Precautions

- Drug Reaction
- stop irritation
- consult nearest hospital
- stop taking drug
- follow up

💊 Medications

- ['Antihistamines', 'Epinephrine', 'Corticosteroids', 'Antibiotics', 'Antifungal Cream']

🥗 Diet Plan

- ['Antihistamine Diet', 'Omega-3-rich foods', 'Vitamin C-rich foods', 'Quercetin-rich foods', 'Probiotics']

🏋️ Workout Plan

- Discontinue offending medication
- Stay hydrated
- Include anti-inflammatory foods
- Consume antioxidants
- Avoid trigger foods
- Include omega-3 fatty acids
- Limit caffeine and alcohol
- Stay hydrated
- Eat a balanced diet
- Consult a healthcare professional

✅ Follow these recommendations for a speedy recovery!

Results & Insights

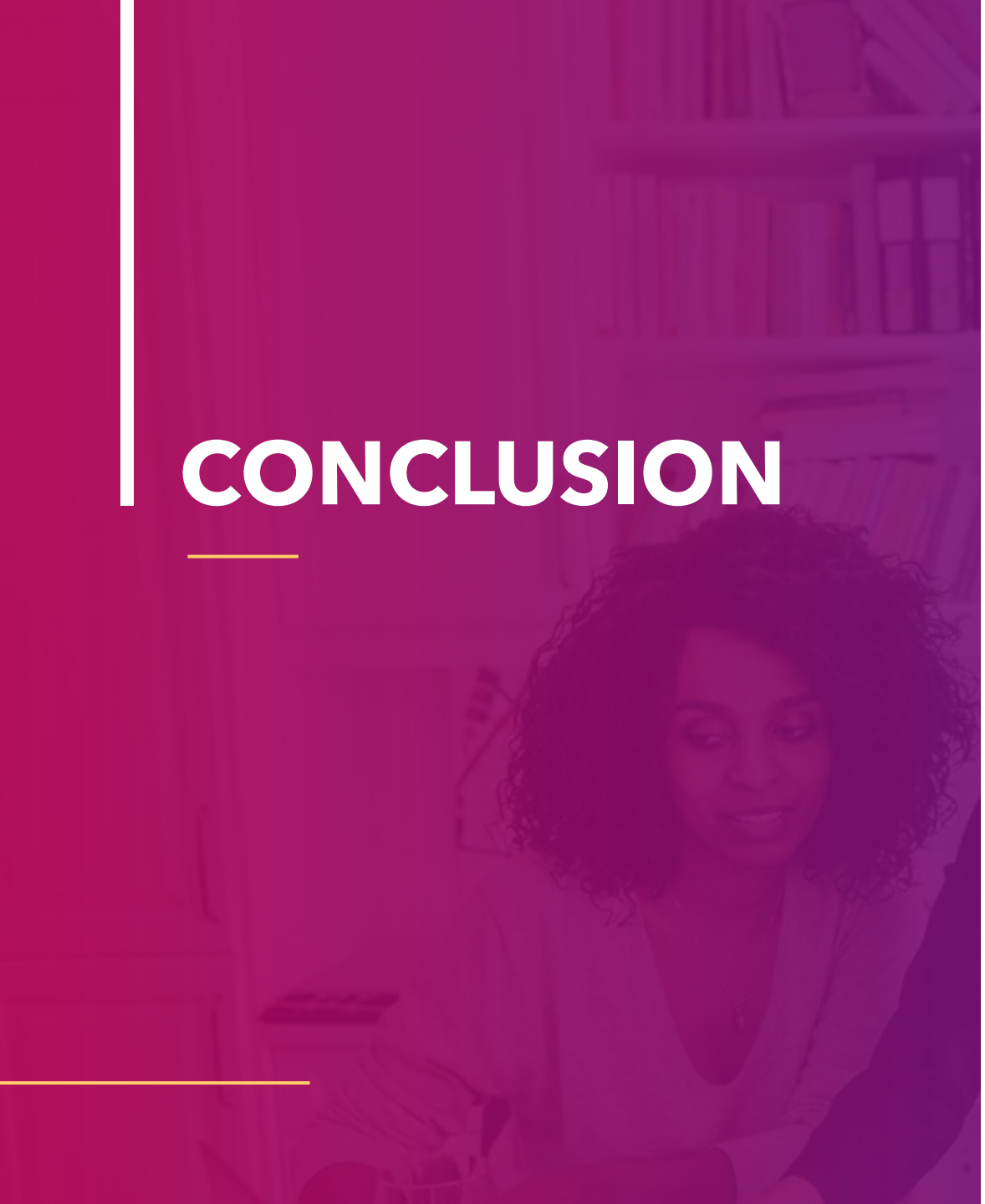
Findings & Insights

- Users find it difficult to obtain quick, customized healthcare suggestions without consulting a professional.
- Structured data helps improve recommendation accuracy by mapping symptoms with relevant treatments.
- Machine learning-based predictions reduce uncertainty in health management, leading to better preventive care.
- A simple, interactive interface encourages engagement, making it easier for users to follow suggested plans.

Results & Benefits

- For Users:
- ✅ Quick and reliable health recommendations without waiting for medical consultation.
  ✅ Easy-to-follow precautions, medications, diet, and workout plans.
  ✅ Accessible on any device via a user-friendly web interface.

- For Businesses & Healthcare Providers:
- 🔹 Reduces patient overload by offering data-drive preliminary diagnosis.



CONCLUSION

MediGuide successfully provides **personalized healthcare recommendations** using Machine Learning and structured data. The project proves that data-driven health insights can make medical guidance **more accessible, faster, and personalized**. With future enhancements, MediGuide aims to revolutionize digital healthcare and offer even greater value to users worldwide.

THANK YOU!

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