NutriMate Chatbot

One stop solution to diet problems

Sustainable Development Goal and Problem Statement

Good Health and Well-being

Sustainable Development Goal 3 (SDG 3), "Good Health and Well-being," aims to ensure healthy lives and promote well-being for all at all ages. One critical aspect of achieving this goal is through proper diet and nutrition.

PROBLEM STATEMENT

In today's fast-paced world, maintaining a balanced and healthy diet is a challenge for many individuals due to a lack of knowledge, time, and resources. Diet-related health issues, such as obesity, diabetes, and heart disease, are prevalent, underscoring the need for reliable and easily accessible nutritional advice that caters to individual dietary needs and preferences.
List

INTRODUCTION

NutriMate Chatbot is an AI-powered virtual assistant designed to offer personalized nutrition advice and support. Leveraging advanced AI technologies, NutriMate provides users with tailored meal plans, nutritional information, and healthy eating tips. The primary goal is to simplify the process of making healthier dietary choices, ensuring that users receive accurate and relevant nutritional guidance.

Why did we choose it

Low knowledge about diet leads to numerous health problems, including malnutrition, obesity, chronic diseases like diabetes and heart disease, and vitamin deficiencies. This lack of education contributes to poor mental health and developmental issues in children. Societal challenges include increased healthcare costs, reduced productivity, and exacerbated food insecurity and inequality. Addressing this requires comprehensive nutrition education programs, public awareness campaigns, accessible information, and policy changes to promote healthy eating. By improving dietary knowledge, we can prevent health issues, lower healthcare costs, and enhance overall well-being and productivity.

Importance of NutriMate Chatbot in Achieving SDG 3

Preventing Malnutrition:

Undernutrition: Ensuring access to a balanced diet helps prevent undernutrition, particularly in vulnerable populations like children and pregnant women.

Promoting Overall Health:

Chronic Diseases: A balanced diet rich in fruits, vegetables, whole grains, and lean proteins can prevent chronic diseases such as heart disease, stroke, and certain cancers.

Strengthening Immune System:

A nutrient-rich diet boosts the immune system, making individuals less susceptible to infections and diseases. Vitamins and minerals like vitamin C, vitamin D, and zinc play vital roles in immune health.

Maternal and Child Health:

Adequate nutrition during pregnancy and early childhood is crucial for healthy development. It helps in reducing maternal and infant mortality rates, ensuring proper growth and cognitive development.

TOOLS

Programming Languages:

Python

Widely used for its extensive libraries and frameworks for machine learning, natural language processing (NLP), and chatbot development.

Machine Learning Frameworks:

TensorFlow
An open-source framework for machine learning and neural networks.

Natural Language Processing Libraries:

NLTK (Natural Language Toolkit)
A suite of libraries for working with human language data.

Chatbot Frameworks:

IBM Watson Assistant

The core technology powering the NutriMate Chatbot, providing an intelligent conversational interface.

Dataset

| Goal	Diet Type	Food Item	Portion Size	Duration (days)	Allergens	Average Caloric Intake	Macronutrient Ratio (Carbs/Fat/Protein)	Meal Frequency	Water Intake	Exe
Weight Loss	Keto Diet	Chicken Breast	200g	60	None	1500-1800	5%/70%/25%	3 meals, 2 snacks	8-10 cups/day	Car
Muscle Gain	High-Protein Diet	Tofu	200g	60	Soy	2000-2500	20%/30%/50%	3 meals, 2 snacks	8-10 cups/day	Stre
Increased Energy	Balanced Diet	Mixed Vegetables	150g	30	None	1800-2200	50%/30%/20%	3 meals, 2 snacks	8-10 cups/day	Ligh
Improved Skin Health	Anti-Inflammatory Die	Blueberries	150g	30	None	1800-2200	50%/30%/20%	3 meals, 2 snacks	8-10 cups/day	Ligh
General Health	Paleo Diet	Grass-Fed Beef	200g	60	None	2000-2500	20%/40%/40%	3 meals, 2 snacks	8-10 cups/day	Mo
Ethical/Environmenta	Vegan Diet	Tofu	200g	60	Soy	1800-2200	60%/20%/20%	3 meals, 2 snacks	8-10 cups/day	Ligh
Gluten Sensitivity	Gluten-Free Diet	Quinoa	150g	30	None	1800-2200	50%/30%/20%	3 meals, 2 snacks	8-10 cups/day	Ligh

Understanding the Data Set: Sample Meal Plans

The data set you have is a spreadsheet containing sample meal plans designed for various health and dietary goals. Each row represents a different goal, such as weight loss, muscle gain, or
improved skin health. Here's a breakdown of the columns and what they tell us:

- **Goal:** The overall health or dietary goal, such as weight loss or muscle gain
- **Diet Type:** The specific diet that is recommended for the goal, such as a keto diet or a high-protein diet
- **Food Item:** A sample food item that is included in the diet plan
- **Portion:** The amount of the food item that is recommended per serving
- **Duration (days):** The recommended length of time to follow the diet plan
- **Allergens:** Any allergens that are present in the food item
- **Average Caloric Intake:** The estimated range of daily caloric intake for the diet plan
- **Macronutrient Ratio (Carbs/Fat/Protein):** The ratio of carbohydrates, fat, and protein in the diet plan
- **Meal:** The recommended frequency of meals and snacks per day
- **Water Intake:** The recommended daily water intake
- **Exercise:** A brief description of the recommended exercise routine.
- **Recommended Supplement (K):** Any supplements that are recommended for the diet plan
- **Potential Side Effects (M):** This column lists any potential side effects that may be experienced while following the diet plan.
- **Suitable For (N):** Who the specific diet plan is suitable for.
- **Not Suitable For (O):** Who the specific diet plan is not suitable for.
- **Cooking Tips (P):** Any cooking tips that are recommended for the meal plan
- **Sample Meal Plan (T):** A sample meal for each day
- **Expected Results (U):** The expected health outcomes that may be achieved by following the diet plan
- **Diet Sustainability (V):** How easy it is to stick to the diet plan in the long term
- **Environmental Impact (W):** The environmental impact of the diet plan, considering factors like resource use and production

Screen Shots
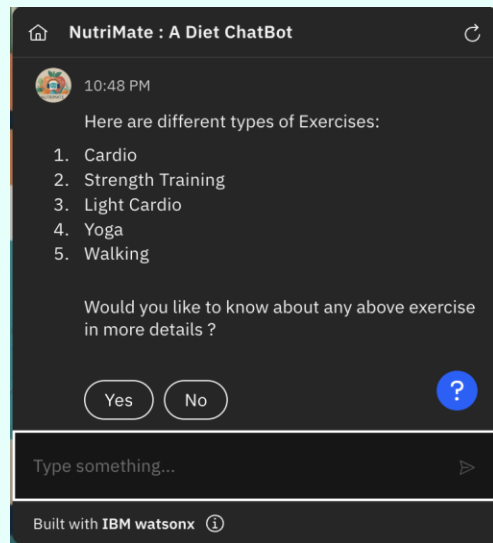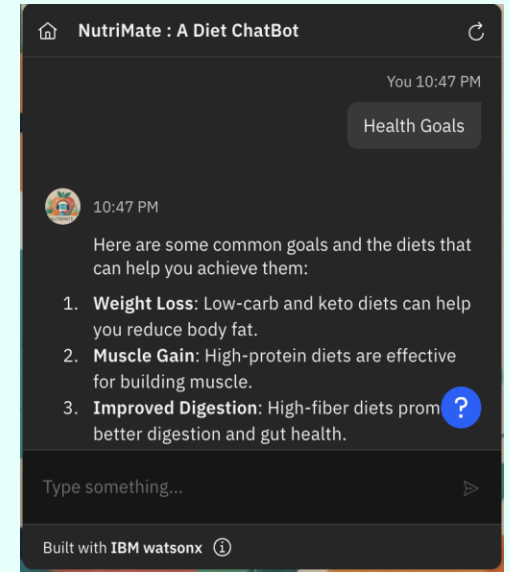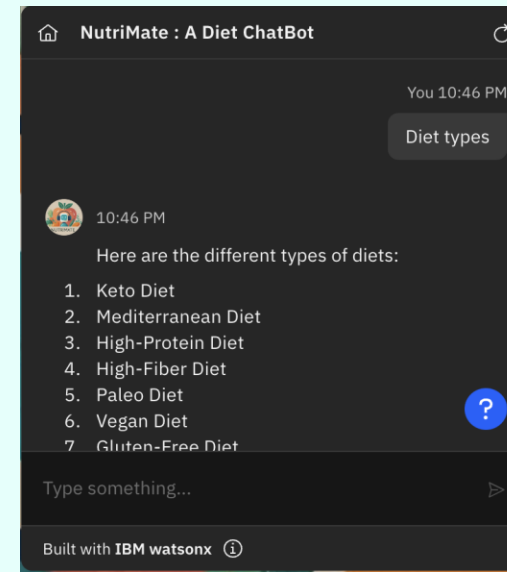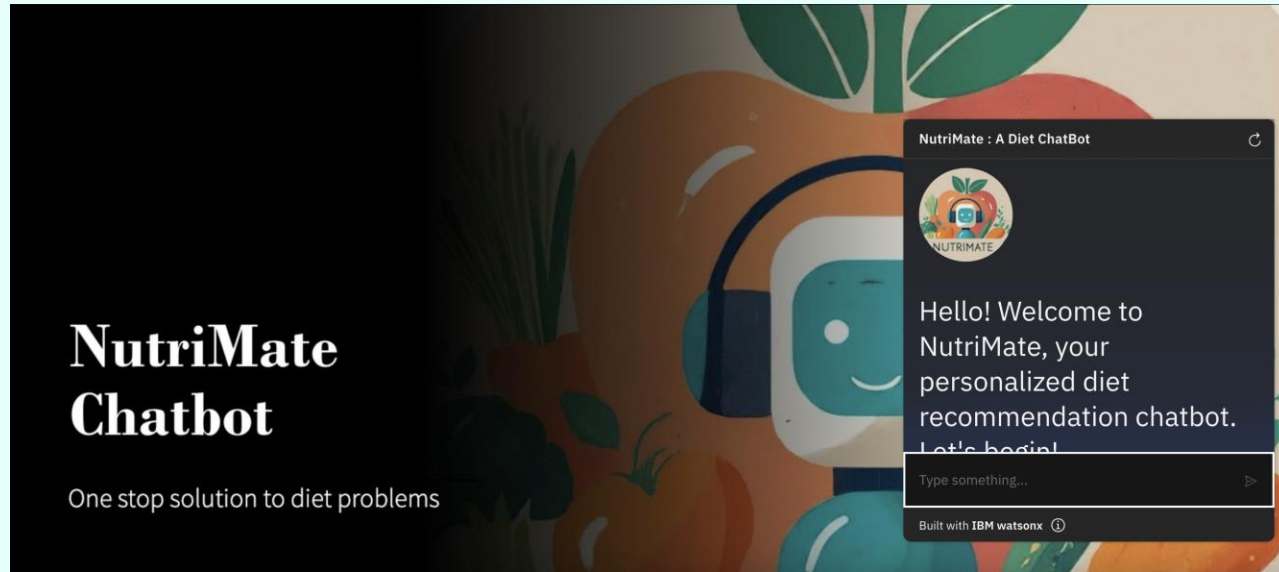
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Thank you

Have a good health !!