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A.K. CHOUDHURY SCHOOL OF INFORMATION TECHNOLOGY
UNIVERSITY OF CALCUTTA

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Certificate

This is to certify that the project synopsis entitled "**Healthy Recipe Suggestion Chatbot**" submitted for partial fulfillment of the requirements of 4th Semester of Master of Computer Application (MCA) under University Of Calcutta; has been carried out by Indrani Dey (Roll No- C91/MCA/232006 and Registration No- 135-1211-0394-20) and Manisha Kumari (Roll No- C91/MCA/232007 and Registration No- 224-1211-0662-20) under the supervision of Dr. Soumya Sen , Assistant Professor , A.K. Choudhury School of Information Technology, University of Calcutta.

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Chairman, board of examiner

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Acknowledgement

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THANK YOU

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Abstract

This project introduces a smart chatbot that helps people plan meals tailored to their health, diet preferences, and nutrition goals. It uses AI tools like machine learning natural language processing, and external APIs to understand what users ask in everyday language and recommend meals that fit their health needs. Built with Python and Flask, its core uses a Random Forest model to predict calorie and macronutrient needs, while Sentence Transformers and the Gemini API enhance its ability to process casual or unclear user inputs. The system extracts details like diseases, ingredient likes or dislikes, and user goals from conversations converting them into accurate health-related data using matching techniques and embedding similarity.

A vector database called Pinecone stores user details and past chats making personalized recommendations quick, secure, and scalable. Recipes come from the Spoonacular API and are adapted to fit specific health requirements, diet choices like vegan or keto, and safe ingredients. If no exact recipe works, the system suggests adjusted options without ignoring health restrictions. The chatbot's interface includes an easy-to-use chat and a user dashboard to keep things smooth and accessible.

Through conversational interactions, the chatbot works to keep users engaged while giving suggestions relevant to their needs making it helpful for people focused on healthy eating. This project highlights how using AI advanced data storage, and external resources together can create a flexible and reliable system that supports users in maintaining a healthier lifestyle with personalized meal recommendations.

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