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Received Rs. 490 from QuarkSek Technologies Private Limited, No. 31, 20th E Cross, Ejipura, Bangalore - 560047 for the January '25 Team lunch.

Name : Santhosh

Signature :

Integration of Gemini AI Model for Negotiation Chatbot

INTRODUCTION

The negotiation chatbot is designed to facilitate interactions between customers and suppliers, allowing users to negotiate prices for products. The key workflow includes:

- **Initiation:** The chatbot prompts the user to propose a price for a specific product.
- **User Input:** The user responds with a desired price.
- **Response Generation:** The chatbot evaluates the user's input against predefined pricing logic and generates an appropriate response using the Gemini AI model.

OBJECTIVE

To develop a chatbot that simulates negotiation processes between customers and suppliers using the Gemini AI model

1. Overview of the Chatbot Workflow

The negotiation chatbot is designed to facilitate interactions between customers and suppliers, allowing users to negotiate prices for products. The key workflow includes:

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- **User Input:** The user responds with a desired price.
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2. Technologies Used

- **Programming Language:** Python, chosen for its versatility and support for AI integrations.
- **Framework:** Flask, used to create a lightweight web server to handle API requests and responses.
- **AI Model:** Gemini, utilized for natural language understanding and response generation.
- **Libraries:**
  - o FuzzyWuzzy: For fuzzy matching of product names based on user input.
  - o TextBlob: For sentiment analysis to gauge user emotion during negotiations.
- **Data Format:** JSON, for sending and receiving structured data between the client and server.

3. Core Concepts and Logic

3.1 Pricing Logic

- Each product has associated **minimum** and **initial prices** stored in a dictionary.
- When the user proposes a price:
  - **Acceptance Logic:** If the proposed price is within the range of minimum and initial prices, the chatbot accepts the offer.
  - **Counteroffer Logic:** If the proposed price is lower than the minimum price, the chatbot generates a higher counteroffer.
  - **Rejection Logic:** If the proposed price exceeds the initial price, the chatbot politely rejects the offer.

3.2 Model Integration

- **API Configuration:**
  - The Gemini AI model is initialized using an API key, allowing communication between the chatbot and the AI service.
  - The chatbot sends user queries to the Gemini model and retrieves generated responses, maintaining context for seamless conversation flow.
- **Response Generation:**
  - The user input is combined with conversation memory and sent to the Gemini model to generate responses that simulate realistic negotiation dialogue based on context and pricing logic.

3.3 Sentiment Analysis

- **Emotional Detection:** User input is analyzed using TextBlob to determine sentiment polarity (e.g., happy, neutral, angry).
- **Adaptive Responses:** Based on detected sentiment, the chatbot adjusts its negotiation strategy. For instance, if the user is detected to be in a positive mood, the chatbot may offer better deals.

4. Workflow Integration

- **Product Switching Logic:** The bot detects when a user wants to switch products through fuzzy matching of user input against the product list.
- **Memory Management:**
  - The chatbot maintains a conversation memory to keep track of previous interactions and context.
  - This memory is updated with each user response and AI reply, enabling coherent and contextually relevant exchanges.

5. SAMPLE DEMOs
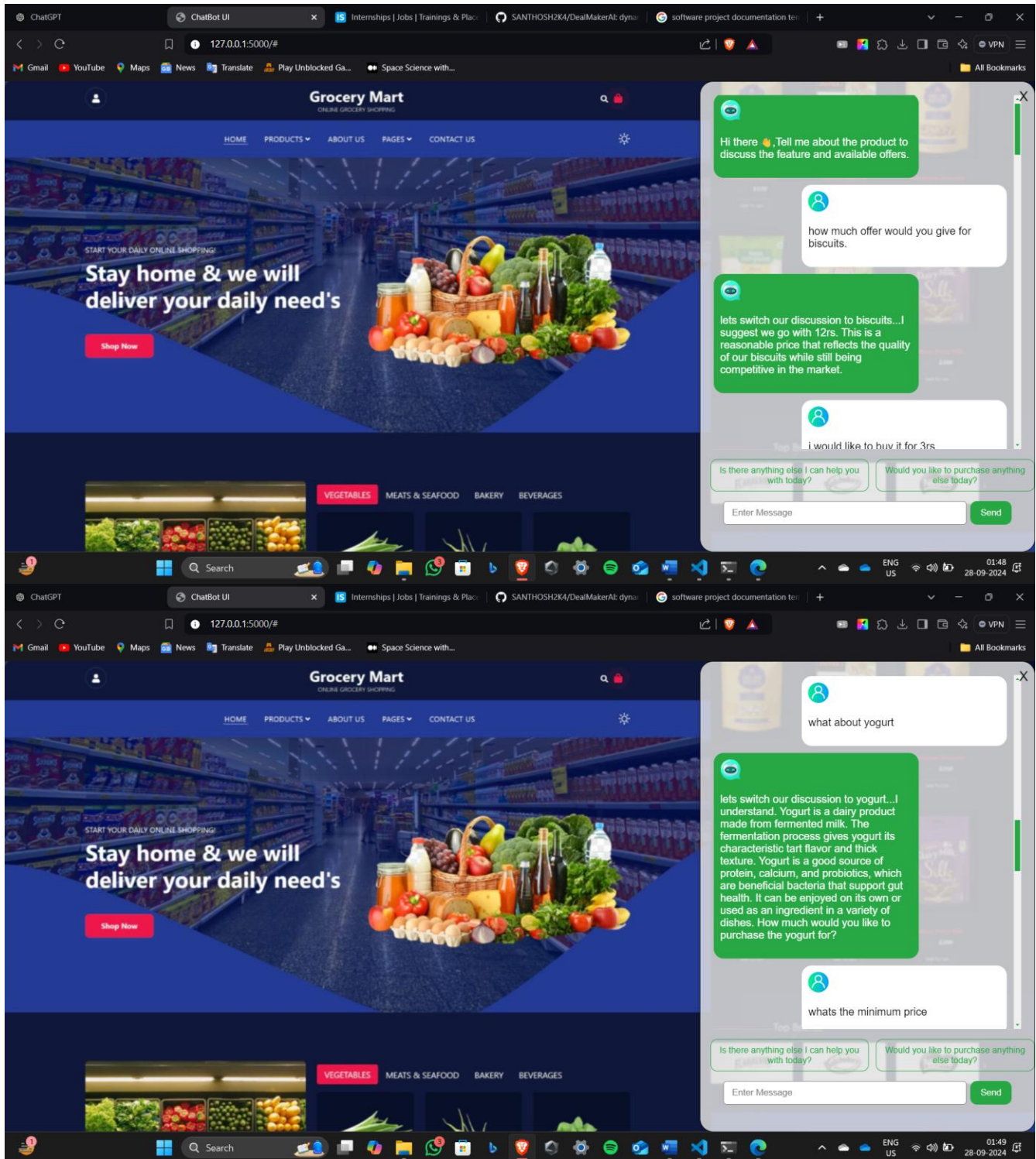
SANTHOSH KUMAR S

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ABOUT ME

Enthusiastic AI & Data Science student and fresher, eager to contribute to innovative projects and gain practical experience. Passionate about working in environments that foster growth, collaboration, and continuous development.

PROJECTS

Bug Tracking Tool
Django, MySQL
March 2024

Built a bug tracking tool for streamlined bug reporting, tracking, and resolution, facilitating user request management and bug resolution.

Precision Agro
Flask, MySQL
April 2023

Developed a web solution for plant disease diagnosis using CNNs and ML-driven crop recommendations, showcased at multiple prestigious hackathons and conferences.

Libro Assist (SEED MONEY PROJECT)
Mobile APP, Flask, MySQL
May 2024

Developed a mobile-integrated library management system using machine learning and chatbots for efficient administration and user engagement, with deployment on AWS EC2 to enhance cloud and server management skills.

EDUCATION

B.Tech Artificial Intelligence and Data Science
KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY
CGPA: **8.6**

Virudhunagar
2021-2025

SSLC & HSC
MSP SOLAI NADAR MEMORIAL HIGHER SECONDARY SCHOOL
SSLC: **83.4** HSC: **86**

Dindigul
2021

INTERN EXPERIENCE

Software Development Engineer – Intern
QuarkSek Technologies - Private Limited
present

Working in R&D on large language models (LLMs), gaining hands-on experience in developing and optimizing AI solutions, collaborating on key projects, and adhering to confidentiality and conduct policies under the supervision of Dinesh Arunachalam.

CERTIFICATION

Geodata Processing Using Python ISRO, IIRS, Online
Red Hat System Administration I (RH124) Red Hat Academy, Madurai
PCAP: Programming Essentials In Python Cisco Networking Academy®, Online

AWARDS/ACCOMPLISHMENTS

Research Paper Published on Journal of Technology
Published a paper under a mentorship by Dr.G.Nirmala Assistant professor at Kamaraj College of Engineering and Technology on "Smart Library Management" based on our libro assist project discussing effective inventory management and the borrowing process.

International Conference
presented our 3rd-year Mini Project idea "Precision Agro" at an international conference ICA5NT hosted by Velammal Engg College.

Achievements in Hackathons, Technical Events and Sports
Secured top positions in several hackathons and symposium events: 1st Prize in Orangomaniac, Discovery Derelicts, and Datum Quest; 2nd Prize in Buildathon; 3rd Prize in Starcoders; and consolation prize in Quarksek. Represented my college in zonal badminton matches, contributing to a 2nd Prize win.

SKILLS

Web Development - Django, Flask.
AI - Deep Learning (Tensorflow), Machine Learning (Sci-kit learn).
Programming: Python, Java.
DB: Mysql.
Data Analysis: Orange Tool .

LANGUAGES KNOWN

Tamil, English