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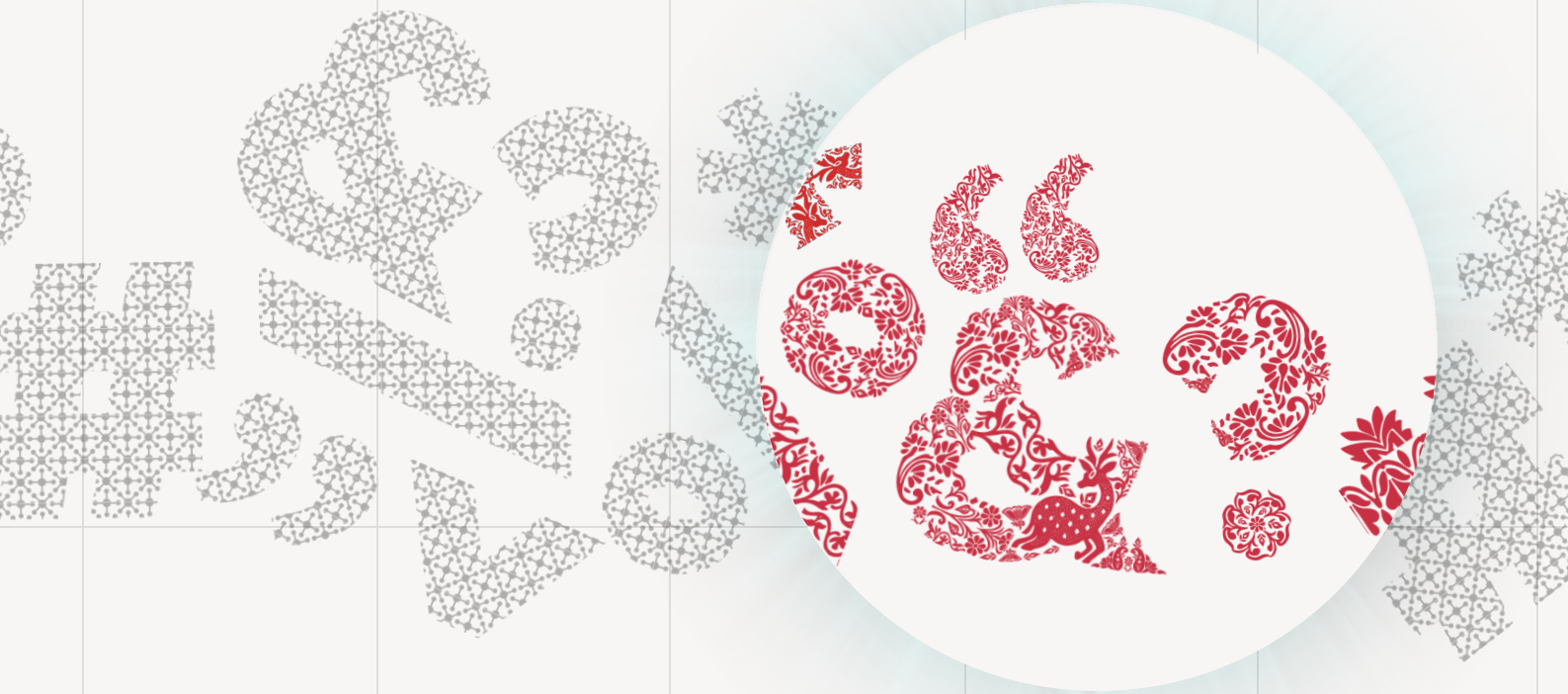
Blistering past horizons.

Coding Club
IIT Guwahati



Trumio Problem Statement

Challenge Overview:

The objective is to develop a sophisticated Multi-Purpose ChatBot that combines the capabilities of general conversational AI with task-specific functionalities. The ChatBot should be designed to perform general discussions similar to GPT models while also executing a range of command tasks that provide practical, real-world value. This dual capability aims to create a dynamic tool that can interact naturally with users and also handle specific, predefined tasks efficiently.

Trumio

Objectives

The ChatBot should engage users in natural, coherent conversations on a wide range of topics, similar to the functionality provided by models like GPT. This includes understanding and responding to prompts, maintaining context, and offering relevant information or entertainment as required.

Command Tasks

a. The ChatBot should be equipped to execute specific tasks that extend beyond general conversation. Examples of these command tasks include:

i. Fetch LinkedIn Profile Details: The bot should be able to retrieve public information from LinkedIn profiles based on user input, such as name or company affiliation.

ii. Update a Post about Trumio on LinkedIn: The ChatBot should be capable of interfacing with LinkedIn to post updates or articles about specified topics, like Trumio, using provided credentials or API access.

iii. Web Scrape a Website and Search for Occurrences of a Text: The bot should perform web scraping activities to search websites for specific text or patterns, providing the results back to the user in a concise format.

The solution should integrate the following technologies to ensure a seamless and robust implementation:

a. FastAPI for building and managing API endpoints.

b. Python as the primary programming language due to its extensive libraries and ease of integration with AI models.

c. ReactJS for building the user interface, offering a dynamic and responsive user experience.

d. WebSockets to enable real-time communication between the ChatBot and users, ensuring prompt task execution and feedback.

e. LangChain to manage and chain together various NLP tasks, enhancing the bot's ability to handle complex requests.

f. OpenAI for leveraging advanced conversational AI models that drive the bot's general discussion capabilities.

Requirements for Round 1:

1. POC Submission:

a. Multi-Purpose ChatBot: Develop a functional ChatBot that supports general conversation and task execution as specified.

b. Command Execution: Implement capabilities to handle command tasks, ensuring the bot performs these actions accurately and securely.

c. Integration: Demonstrate integration with the specified tech stack, showing seamless operation across the various components.

2. Document Submission:

a. Software Architecture Plan: Provide a detailed breakdown of the ChatBot's architecture, including:
   i. Command processing flow and task execution points.
   ii. Data flow diagrams showing task initiation, processing, and response mechanisms.
   iii. Considerations for API integrations and task security.

b. Task Security Features: Outline measures to ensure secure task execution, protecting user data and ensuring compliance with data protection regulations.

c. Feature Plan: Include a roadmap detailing the tasks that will be developed in subsequent rounds, highlighting advanced features like real-time task monitoring and AI-driven improvements.

d. UI/UX Design: Present wireframes or design mockups showing how the ChatBot will handle both general conversations and task executions in a user-friendly manner.

Evaluation Criteria

a. POC Quality: Effectiveness of the ChatBot in handling both general conversations and executing specified tasks.

b. Software Architecture Plan: Clarity and robustness of the architectural design, including task management and security considerations.

c. Technical Feasibility: Scalability and feasibility of integrating the specified tech stack components to deliver a cohesive solution.

d. Innovation: Creativity in designing the ChatBot's capabilities, especially in command execution and task management.

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Note

a. Please sign up on www.trumio.ai to be eligible for this PS.

b. Submissions will need to be done on Trumio. Details on how to submit will be shared later.