Guru Nanak Dev Engineering College

Training Diary – TR-102 Report

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Day 12

Training Summary

On Day 12 of the training program, we focused on **Function Calling in LangChain**, which allows external APIs and tools to be integrated with large language models. We explored how to define tools and enable models to invoke them dynamically during execution.

What is Function Calling in LangChain?

Function calling in LangChain empowers language models to interact with **external tools** (APIs, scripts, databases, etc.) by structuring inputs and outputs in a standardized format. This technique is essential for enhancing the model's real-time interactivity with external data sources.

Hands-On Projects Completed

1. Live Cricket Info from Cricbuzz API

- Used **Cricbuzz's API** to fetch real-time match data including:
    - Live scores
    - Match status
    - Team performance
- Integrated this into a LangChain function so the LLM could dynamically respond with live cricket updates based on user queries.

2. Weather Forecast with Gemini + Weather API

- Integrated **Weather API** and used **Gemini** for intelligent summarization.
- Model responded to location-specific weather queries and displayed structured outputs like:
    - Current temperature
    - Weather condition (e.g., cloudy, rainy)

   o Additional details like humidity or wind speed

Both tools were successfully implemented and registered within LangChain, enabling seamless access during runtime.

Tools & Technologies Used

- **LangChain** – for defining and calling external tools

- **Gemini API** – for response generation and summarization

- **Cricbuzz API** – for fetching live cricket match data

- **Weather API** – for real-time weather information

- **Python** – for scripting and integration

Learning Outcome

- Understood the structure and logic behind **LangChain Tool & Agent usage**.

- Implemented real-world API integrations for **dynamic querying** via LLM.

- Built intelligent, context-aware tools to respond with live and relevant data.

- Strengthened knowledge of function schemas, parameters, and usage flow in LangChain.