**Week 3 – Development & Implementation (8th Sep)  
  
Name: Pinakapaani P  
REG ID: 24UG00530  
Course: B.Tech Computer Science & AI**

**>>>>Introduction**

The Week 3 assignment focuses on developing a **basic campus chatbot** for Chanakya University using Python. The chatbot is designed to:

* Assist users in finding campus locations and navigating between them.
* Provide answers to frequently asked questions (FAQs) like admissions, fees, hostel info, and sports facilities.
* Connect to a **SQLite database** for storing and retrieving department information.
* Offer a **prototype navigation system** to find paths between campus locations.

This project aims to integrate **Natural Language Processing (NLP)** technique

**>>>>>Implementation**

**Chatbot Interface**

* Developed using Python.
* Handles basic conversational inputs:

Greetings (hi, hello)

Farewells (bye)

Thanks (thanks, thankyou)

**Database Integration**

* **SQLite database** (campus.db) stores department information.
* SQL table departments contains name and info.
* Queries are executed to fetch department details for user inputs.

**NLP Handling**

* Used **Python’s difflib module** for autocorrect.
* Helps the chatbot understand queries even with type errors.

**Campus Navigation**

* Campus locations stored in a **graph structure (campus\_map)**.
* Pathfinding implemented using **Breadth-First Search (BFS)** to find the shortest path between two locations.
* Supports queries like:
* path from main entrance to basketball court
* directions from admin block to hostel

**FAQs Handling**

* Predefined FAQs for **admissions, fees, hostel info, placement, food court, sports**.
* Supports course-specific queries (BTech, MTech, MBA).

**User Commands**

* where is <location> → Returns department info
* path from <start> to <end> → Returns shortest path
* what locations / list locations → Lists all campus locations
* fees / btech fees / mtech fees / mba fees → Returns fee info
* exit → Ends the conversation

**Features**

* Basic NLP for type errror correction
* Multi-topic query handling (location, fees, navigation)
* Database-driven information retrieval
* Campus map navigation using BFS
* Interactive console-based chatbot

**Conclusion**

The Week 3 assignment successfully demonstrates:

* Integration of **Python programming**, **databases**, and **algorithms** for a practical chatbot.
* Ability to **navigate campus locations**, answer FAQs, and handle user input with typos.
* Provides a foundation for more advanced chatbots with GUI, NLP libraries, and dynamic database updates in the future.