**Campus Navigator Chatbot**

Abstract:

In this project, we are going to create a chatbot that navigates students and guests through the campus of Chanakya University. The chatbot employs algorithms such as BFS, DFS, UCS, and A\* on a campus map (implemented as a graph) to provide the shortest path. It is able to answer basic questions such as "Where is the library?" or "How do I go to the admin block?" and give directions in no time.

Introduction:

Chanakya University is a big campus, and new entrants or visitors frequently find it difficult to locate classrooms, offices, or facilities. Paper maps or directions from others are not always assured. The chatbot looks to offer immediate, precise directions with details of buildings.

Issues:

•Students and visitors frequently become lost or take too much time.

•No rapid method to refer to information regarding departments or facilities.

•Fresh students are confused by the campus layout.

•Develop a graph model of campus buildings.

•Compute shortest paths using BFS, DFS, UCS, and A\*.

•Display estimated distance and time.

•Respond to FAQs such as "Where is the canteen?" or "Best route to the library?"

•Display building information (departments housed therein, etc.).

Scope:

•Mapping key locations such as Main Gate, Library, Hostel, Canteen, Auditorium, and Admin Block.

•Search algorithm implementation.

•Responding to FAQs and displaying building information.

•Simple chatbot interface with a map visualization.

Requirements:

•Campus map data with building and distances.

•Nodes (places) and edges (routes) graph.

•A\* algorithm coordinates.

•FAQs for rapid responses.

Tools & Technology:

•Language: Python

•Database: MySQL or dictionary

•Google Maps API

•BFS, DFS, UCS, A\* algorithms