**Title: BotBrain: A Student Campus Navigator**

**Abstract:**

Bot Brain aims to create an intelligent campus guide for Chanakya University students. The system will use search algorithms and artificial intelligence to provide pathfinding and information services. It will be a digital campus guide with current directions and university locations.

**Introduction:**

Students may have trouble getting around a new campus. BotBrain solves this problem by creating a digital model of the campus and using smart search methods to find the best routes between important places.

**Problem statement:**

Students often have trouble getting around a big college campus, which can be confusing and waste time. One big problem is that there isn't a smart, centralized navigation tool.

**Objectives:**

• To make a graph data structure that looks like the Chanakya University campus.   
• To use basic search algorithms (BFS and DFS) to find paths.   
• To make a simple text-based interface for processing queries.   
• To give correct information about where things are and how to get there.

**Scope:**

The Chanakya University campus is the only place where the project will take place. It will include at least 12 specific buildings and focus on pathfinding using search algorithms that have already been put into place. The system can handle simple text queries but not complicated natural language processing.

**Campus Layout: (12 Locations)**

1. Main Gate
2. Academic block A
3. Academic block B
4. Food court
5. Library
6. Registrar Office
7. Hostel
8. Canteen
9. Sports complex
10. Medical centre
11. Auditorium
12. Faculty Housing

**Literature Review:**

Chatbots use AI to quickly reply to students and can manage many questions at the same time, but they sometimes get confused with tricky or uncommon queries. Navigation apps like Google Maps or GPS are very helpful for finding places and even have AR features in some cases, but they don’t really guide students from one building to another inside the campus.

**List of tools and technologies:**• Python is the main programming language for the search algorithms and back-end logic.   
• Data Structures: For the graph representation, we use native Python data structures like dictionaries and lists, and for the BFS queue, we use collections. Deque.   
• Version Control: Use Git and GitHub to manage and work on code together.   
• Documentation: Use Python docstrings and comments to document your code, and a README.md file to give an overview of your project.