

# ----Chanakya University----

## BotBrain Project ( Week- 2)

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### System Description

The Smart Campus Guide is designed to help students, faculty, and visitors navigate within

Chanakya University.

### The user provides:

- Current location (start point)
- Destination (end point)
- Choice of algorithm (BFS, DFS, UCS, or A\*).

The system calculates the path, shows the distance, and provides basic information about

the destination building (such as purpose, services, or timings).

This design makes the system simple, interactive, and useful for real-time campus guidance.

### Block Diagram

**User → User Interface → Pathfinding Algorithms → Output (Path + Distance + Info)**

**User Interface (UI):** Collects user input (start, destination, algorithm).

**Pathfinding Module:** Uses BFS, DFS, UCS, or A\* to find routes.

**Database:** Stores building details.

**Output:** Displays the shortest path, distance, and building information.

# Modules / Features

## 1. User Interface (UI)

Accepts inputs (start, destination, algorithm). Displays output clearly.

## 2. Navigation & Pathfinding

Models the campus as a graph (nodes = buildings, edges = paths).

Runs search algorithms to find possible routes.

Compares and shows the shortest or most efficient path.

## 3. Database

Stores details of campus buildings.

## 4. Output Module

Displays the final path, distance, and information about the selected destination.

## Methodology:-

1. User enters current location, destination, and algorithm.
2. The system applies the selected search algorithm on the campus graph.
3. Routes are calculated and compared.
4. The shortest/best path is selected.
5. Building information is retrieved from the database.
6. Final results (path, distance, info) are displayed to the user.

## PEAS Analysis

**Performance Measure:** Path should be correct and preferably shortest.

**Environment:** Chanakya University campus map.

**Actuators:** User Interface (for displaying results).

**Sensors:** User inputs and stored campus data.