**Greedy Best-First Search:**

Path:

Bus Stop

Library

Car Park

Maths Building

Canteen

AI Lab

Level:

5

Number of Nodes Expanded:

5 (Bus Stop, Library, Car Park, Maths Building, Canteen)

**A Star Search:**

Path:

Bus Stop

Library

Student Center

Store

Canteen

AI Lab

Level:

5

Number of Nodes Expanded:

5 (Bus Stop, Library, Student Center, Store, Canteen)

**Uniform Cost Search (UCS):**

Path:

Bus Stop

Library

Student Center

Store

Canteen

AI Lab

Level:

5

Number of Nodes Expanded:

15 (Bus Stop, Library, Student Center, Store, Canteen, Car Park, Theater, Sports Center, Maths Building)

**Analysis:**

All three search algorithms found the same path from the start node (Bus Stop) to the goal node (AI Lab), with a level of 5.

Greedy Best-First Search and A\* Search both used a heuristic to guide their search. In this case, the heuristic was based on the straight-line distance to the goal. They expanded fewer nodes compared to UCS because they used the heuristic to prioritize nodes that were closer to the goal.

UCS, on the other hand, expanded more nodes because it considered the cost of reaching each location from the start node without any heuristic guidance. It explored multiple alternative paths to reach the goal.