

Artificial Intelligence

Lab Assignment #1

Due Date: Oct,20,2024

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Attention:

- Individual Lab Assignment
- You must record a video while working.
- Your all works should be in video, if you submit the code and your activity is not in video then marks will be zero. Because we must check so many things, how you are searching on the internet, how you install a new library, how you learn and follow a new library.
- After completing all tasks while recording video, then upload to YouTube channel and upload your code on GitHub.
- You must submit a YouTube link, GitHub link and. IPYNB file through the CUI portal.

Task 1 [20 points]

Imagine you're a tourist in Pakistan, and you want to travel from **Islamabad** to **Karachi**. You want to find the shortest route in terms of the number of cities you need to travel through. The cities are connected through highways, and your goal is to find the shortest path using BFS.

Cities and Their Connections (Graph):

You will use the following cities and their connections for this scenario:

- **Islamabad** is connected to **Rawalpindi**, **Lahore**, and **Peshawar**.
- **Rawalpindi** is connected to **Islamabad**, **Peshawar**, and **Quetta**.
- **Peshawar** is connected to **Islamabad**, **Rawalpindi**, and **Quetta**.
- **Lahore** is connected to **Islamabad**, **Multan**, and **Quetta**.
- **Multan** is connected to **Lahore**, **Karachi**, and **Quetta**.
- **Quetta** is connected to **Rawalpindi**, **Peshawar**, **Multan**, and **Karachi**.
- **Karachi** is connected to **Multan** and **Quetta**.

Best Luck