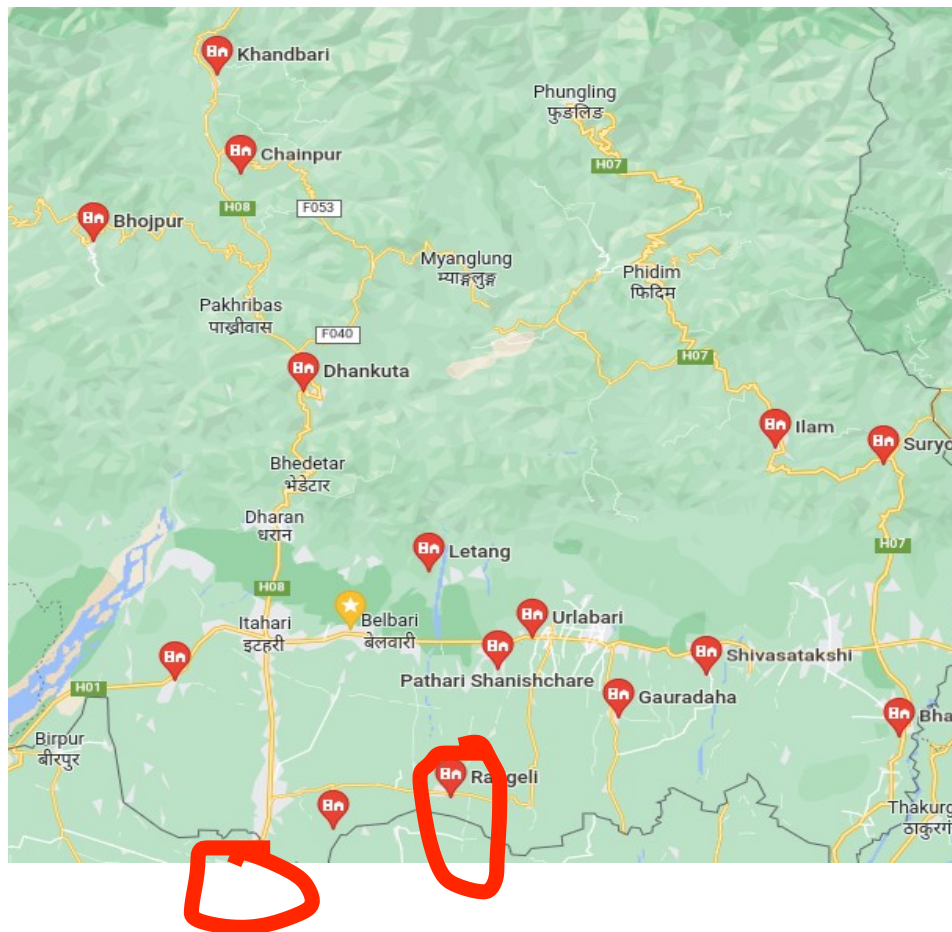


1. Problem statement

- ◆ Given a transportation network represented as a graph where nodes/state represent cities and edges represent road links between the cities, implement a function (using any high level language; preferably Python) that performs a breadth-first search and return the path from starting city to the destination city, if there exist.

Starting city: Biratnagar

Destination city: Ilam



- ◆ Suppose you have a family hierarchy: (Please use appropriate names of for every nodes and you are free to restructure the hierarchy as per your family structure)

Example:

Great_grand_parents (root node)

Grand_parents (Great_grand_parents child)

Parents (Grand_parents child)

You (Parents child)

Uncle (Grand_parents child)

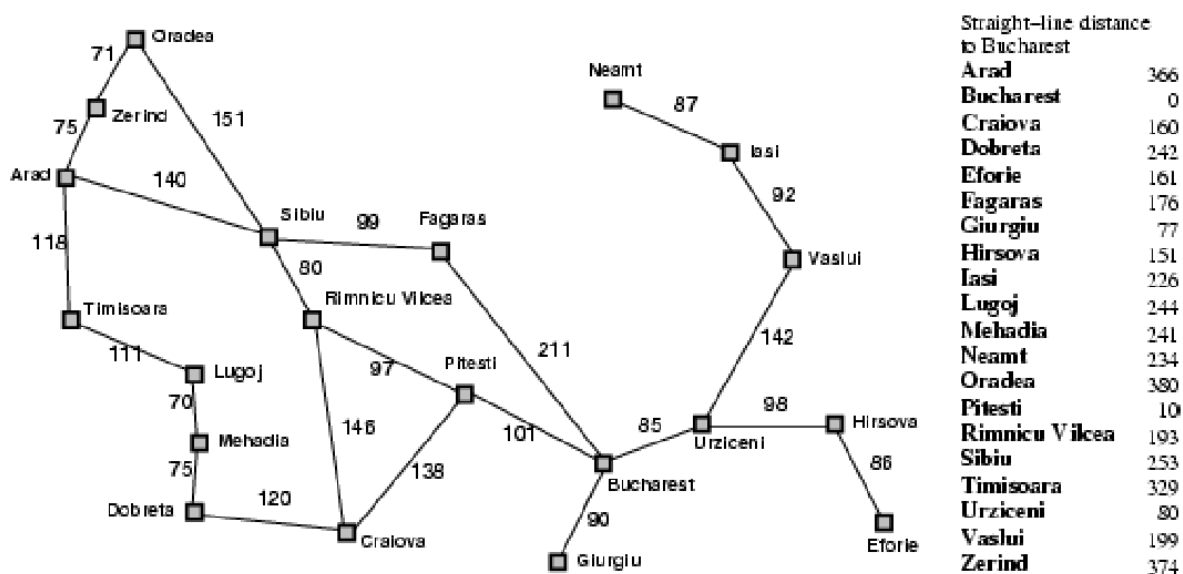
Parents_Uncle (Great_grand_parents child)

XYZ (Parents_Uncle child)

ABC (Parents_Uncle child)

Now based on your family hierarchy represented as a tree implement a function (using any high level language; preferably Python) that performs a depth-first search and return the path from node Great_grand_parents (root node) to node You (Parents_child).

- ◆ Consider a the following search problem represented by a graph, where each node in the graph represents a state, and each edge represents a possible transition between states. The goal is to find the path from the initial state to the goal state using the Greedy Best-First Search algorithm. The search algorithm utilizes a heuristic function to estimate the cost from each state to the goal.



Given following graph of cities, starting at Arad city, problem is to reach to the Bucharest.



Warning:

The assignment is simple enough, and the instructor too has access to existing online implementations. Further, the assignment has to be done individually. Any hint of plagiarism will lead to serious implications.