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CS315 Programming Assignment 1 Writeup

Compile Instructions

To compile the program, unzip the file and open the command prompt. From the command line, change the directory to where the unzipped files are located and type in the command: python3 main.py

Graph Print Output

```
Arad - > Zerind, Timisoara, Sibiu.
Bucharest - > Urziceni, Giurgiu, Pitesti, Fagaras.
Craiova - > Dobreta, Pitesti, RimnicuVilcea.
Dobreta - > Craiova, Mehadia.
Eforie - > Hirsova.
Fagaras - > Bucharest, Sibiu.
Giurgiu - > Bucharest.
Hirsova - > Eforie, Urziceni.
Iasi - > Neamt, Vaslui.
Lugoj - > Mehadia, Timisoara.
Mehadia - > Dobreta, Lugoj.
Neamt - > Iasi.
Oradea - > Zerind, Sibiu.
Pitesti - > Bucharest, Craiova, RimnicuVilcea.
RimnicuVilcea - > Craiova, Pitesti, Sibiu.
Sibiu - > Arad, Fagaras, Oradea, RimnicuVilcea.
Timisoara - > Arad, Lugoj.
Urziceni - > Bucharest, Hirsova, Vaslui.
Vaslui - > Iasi, Urziceni.
Zerind - > Arad, Oradea.
```

Breadth First Search

```
Shortest path from Arad to Sibiu = Arad Sibiu
Shortest path from Arad to Craiova = Arad Sibiu RimnicuVilcea
Craiova
Shortest path from Arad to Bucharest = Arad Sibiu Fagaras
Bucharest
```

Dijkstra's Algorithm

```
Shortest Distance from Arad to Bucharest is 418
Shortest Path from Arad to Bucharest is Arad Sibiu RimnicuVilcea
Pitetsi Bucharest
```

This path different from the path from Arad to Bucharest found in part 2 because in this case, the shortest path is defined by the path cost and not the path length in terms of edges