

Business Case: City Management

Sub-task: Mayor Tour

SDG Goal: 11

Target: 11.2

Indicator: 11.2.1

The city mayor occasionally takes the tour of the business offices to monitor the works of every department. The offices visited and their numbers are represented below:

SI. No.	Office Type	Number
1	Post Office	3
2	Schools	4
3	Hospitals	5
4	Electric Board	1
5	Agriculture Market Board	7

The above number is drawn from the city designed and the cost was estimated for the car travel. There are several routes that connect these places and below is the figure (*Figure is only a rough sketch to give you an idea. In your project you must keep it as realistic as possible mapping to your city design*).

The cost to travel Hospital-1 to School-1 is 120.

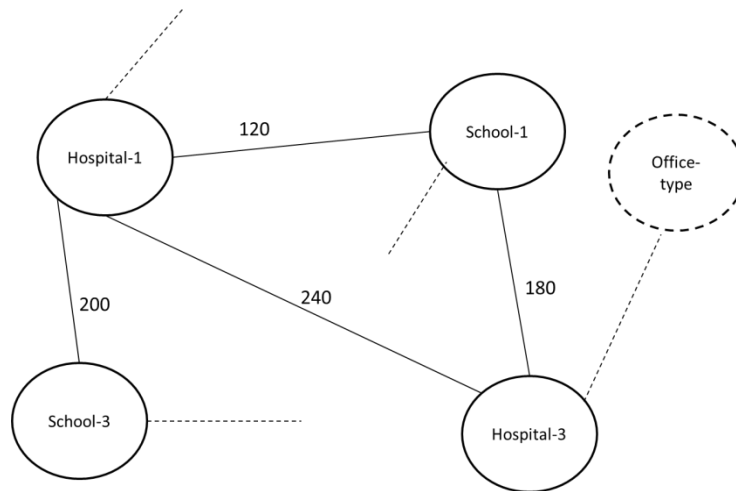


Fig 1: Mayor Travel Map

An optimal tour is prepared for the city major using Dijkstras algorithm. The data generated can be found in the file [HERE](#) (link to the text file that is present on Github) and the code can be viewed [HERE](#) (provide link to dijkstras code). The code is implemented using Heap data Structure. The efficiency of the code is $|E|\log|V|$ and the algorithm uses the greedy technique. This case made me realize on how Dijkstras algorithm can be used in real time scenarios.

(You can further reflect on your experiences in designing and implementing this sub-task)