Exercise:

A rider is travelling from shahra-e-faisal to lucknow society to deliver an order. He needs to reach the destination in no more than 30 minutes.

He has limited fuel so it is necessary to stop at some petrol pump in order to refill. He can take following available routs.

R1- Use EBM Causway to reach Brooks chowrangi and then reach the destination via industrial area road.

R2- Use EBM Causway to reach Brooks chowrangi and then straight to attock petrol pump. Then using Korangi road to the destination.

R3- Use Shaheed-E-millat Express Way to reach attock petrol pump then using Korangi road to the destination.

Distances between these points are given in table below.

Location A	Location B	Distance
Shahra-e-Faisal	Attock Pump	8.5km
Shahra-e-Faisal	Brooks	4.8km
Brooks	Attock Pump	2.1km
Attock Pump	Destination	1.3km
Brooks	Destination (via Industrial area)	4.5km
Brooks	Destination (Directly)	3.3km

Question-1: Represent this scenario using a connected graph.

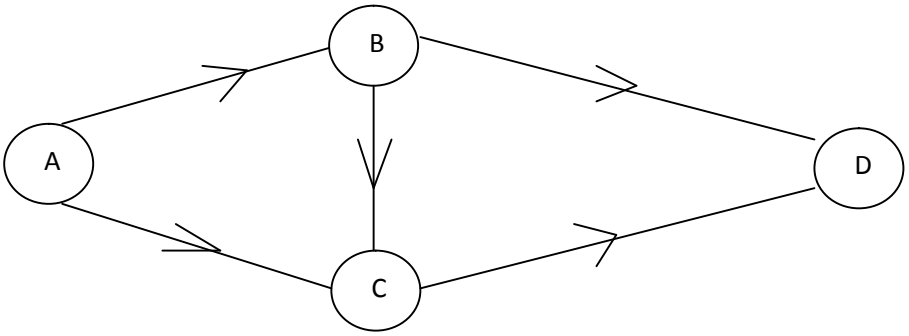
Question-2: Find Simple Circuit and Simple path if possible.

Question-3: Find if it has Euler or Hamiltonian Circuit and/or Path?

Question-4: Find the shortest path using Dijkstra Algorithm.

Question-5: It the shortest path suitable in above scenario? If not, what is the alternative shortest path?

Solution:



Label the edges and Complete the rest...