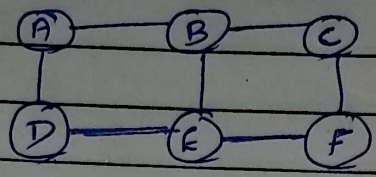
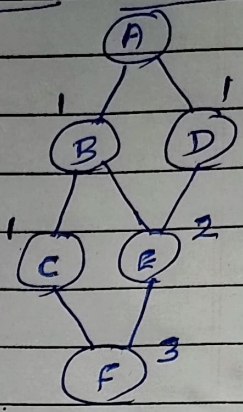
PAGE NO.
DATE : / /

Girvan - Newman Algorithm



Shortest path from Node A

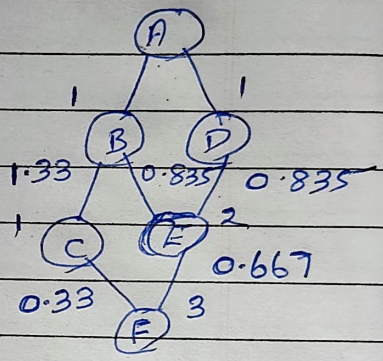


Computing Scores of Edges

FC = 1/3 = 0.33
FE = 2/3 = 0.667

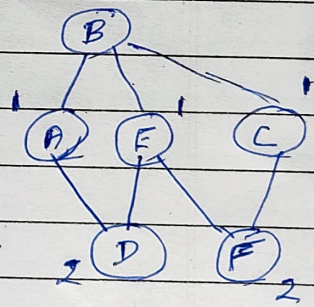
CB = 1 + 0.33 = 1.33
EB = (1 + 0.667)/2 = 0.835
ED = (1 + 0.667)/2 = 0.835

BA = 1 + 1.33 + 0.835 = 3.165
BD = 1 + 0.835 = 1.835



Node B

Shortest path for Node B

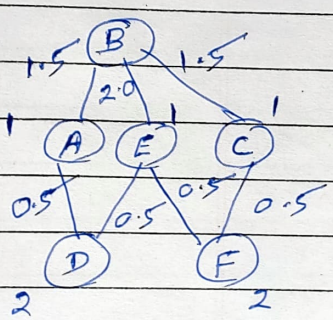


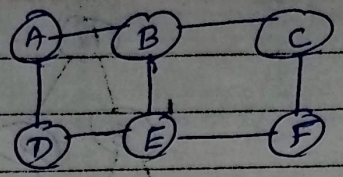
Computing Scores of Edges

DA = 1/2 = 0.5
DE = 1/2 = 0.5

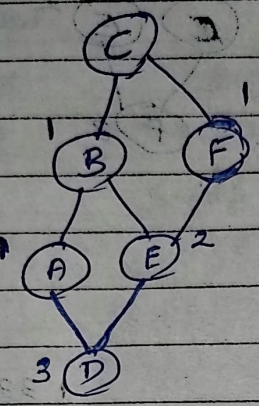
FE = 1/2 = 0.5
FC = 1/2 = 0.5

AB = 1 + 0.5 = 1.5
EB = 1 + 0.5 + 0.5 = 2
CB = 1 + 0.5 = 0.5





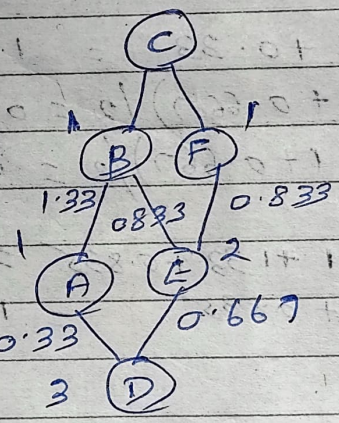
Node (C)
Shortest path



DA = 1/3 = 0.33
DE = 2/3 = 0.667

AB = 1+0.33 = 1.33
EB = (1+0.667)/2 = 0.833
EF = (1+0.667)/2 = 0.833

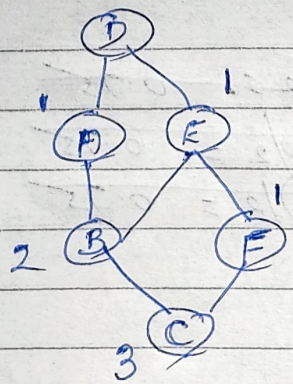
BC = 1+1.33 +0.833 = 3.163
FC = 1+0.833 = 1.833



0.833
2 | 1.667
16

1.33
0.833
3.163

Node (D)
shortest path.

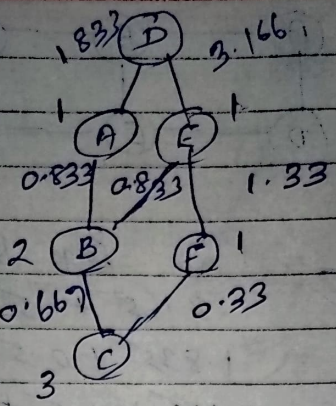


TNPL
DATE / /

CB = 2/3 = 0.667
CF = 1/3 = 0.33

BA = (1+0.667)/2 = 0.833
BE = (1+0.667)/2 = 0.833
FE = 1+0.33 = 1.33

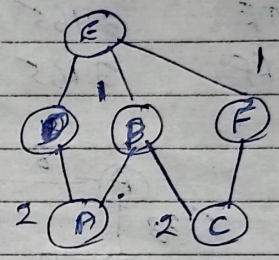
AD = 1+0.833 = 1.833
ED = 1+0.833+1.33 = 3.166

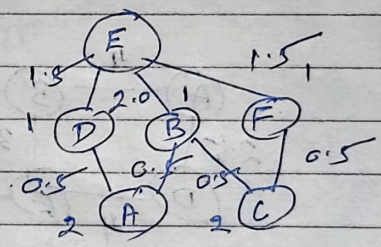


Node (E) shortest path

1/2 =
DA = 0.5
BA = 1/2 = 0.5
BC = 1/2 = 0.5
FC = 1/2 = 0.5

DE = 1.5
BE = 1+0.5+0.5 = 2
FE = 1+0.5 = 1.5



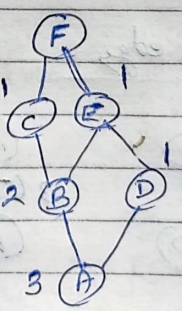


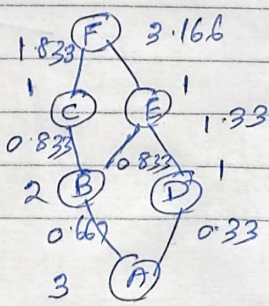
Node (F) Shortest path

AB = 2/3 = 0.667
AD = 1/3 = 0.33

BC = (1+0.667)/2 = 0.833
BF = (1+0.667)/2 = 0.833
DE = 1+0.33 = 1.33

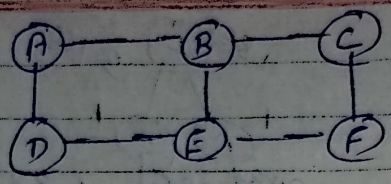
CF = 1+0.833 = 1.833
EF = 1+0.833+1.33 = 3.166



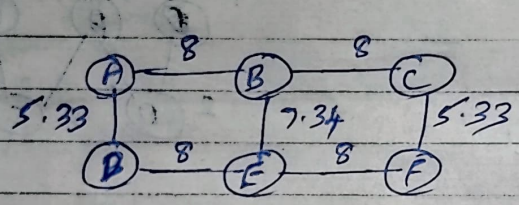


TNPL

DATE / /



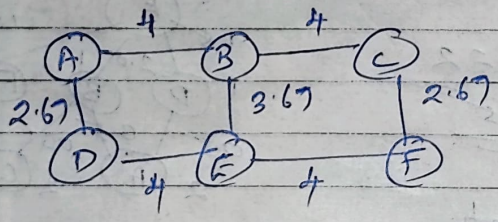
Edges	Edge Betweenness
AB	3.165 + 1.5 + 1.33 + 0835 + 0.5 + 0.667 = 8
AD	1.835 + 0.5 + 0.33 + 1.835 + 0.5 + 0.33 = 5.33
BC	3.165 + 1.5 + 1.33 + 0.835 + 0.5 + 0.667 = 8
BE	0.835 + 2 + 0.835 + 0.835 + 2 + 0.835 = 7.34
CF	1.835 + 0.5 + 0.33 + 1.835 + 0.5 + 0.33 = 5.33
DE	3.165 + 1.5 + 1.33 + 0.835 + 0.5 + 0.667 = 8
EF	3.165 + 1.5 + 1.33 + 0.835 + 0.5 + 0.667 = 8



Non directional graph

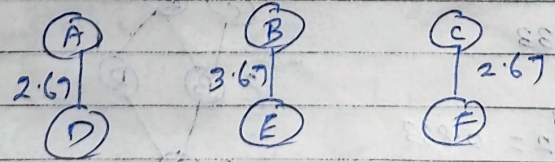
Bidirectional graph

All edge value divided by 2.



Girwan Newman Algorithm.

Remove edge with highest weightage.



Three Communities