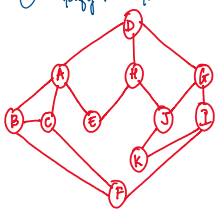
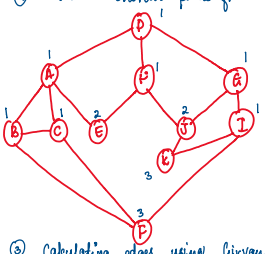
Assignment 2

Monday, January 23, 2023 2:45 PM

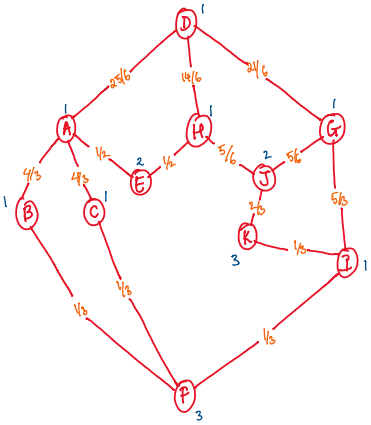
① Simplify the n/w :



② Calculate shortest paths from D :



③ Calculating edges using Girvan & Newman method :



2.1 Possible Bond between b-c:
Weak Bond Reason: According to Triadic Closure Assumption, the bond is formed via distant connections which are all weak ties. Thus, they can only connect as Weak Bond.

2.2 Nodes satisfying Strong Bond Triadic Closures:

1. A-B(s), A-D(s), B-D(w)
2. B-C(s), B-A(s), A-C(w)
3. D-A(s), D-E(s), A-E(w)

Nodes not satidying Strong Bond Triadic Closures:

1. C-B(S), C-E(S), B-E(no bond)
2. E-D(S), E-C(S), D-C(no bond)

This categorization is due to the fact that Strong Bond Triadic Closure states that, if for 3 nodes (A,B and C); A has strong bond with B and a strong bond with C, eventually, B and C will form a Weak bond. Here, 3 triplets satisfy the condition and 2 triplets don't.

2.3 Nodes violating Strong Triadic Closure Property:

1. C-B(S), C-E(S) -> B-E(no bond)
2. E-D(S), E-C(S) -> D-C(no bond)

This categorization is due to the fact that Strong Bond Triadic Closure states that if for 3 nodes (A,B and C); A has strong bond with B and a strong bond with C, eventually, B and C will form a Weak bond. There should be presence of atleast a weak bond between B-E and D-C to avoid them breaking the rule.

2.4 Nodes violating Strong Triadic Closure Property: C-B(S), C-E(S) -> B-E(no bond)
This categorization is due to the fact that Strong Bond Triadic Closure states that if for 3 nodes (A,B and C); A has strong bond with B and a strong bond with C, eventually, B and C will form a Weak bond. There should be presence of atleast a weak bond between B-E to avoid them breaking the rule.