23/11/22

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Subject : Design and Analysis of Algorithms
Exp 6 : To implement all pair shortest path algorithm - I

Report :-

Floyd-Warshall algorithm :-
It uses dynamic programming formulation to solve all pairs shortest paths problem on directed graph $G = (V, E)$. The Floyd-Warshall algorithms exploits a relationship between existing shortest path and shortest path by considering all intermediate vertices.

$$A^k[i,j] = \min\{A^{k-1}[i,j], A^{k-1}[i,k] + A^{k-1}[k,j]\}$$

Functions used :- void Floyd_Warshall ( )
Given a graph and number of vertices as parameters, it prints the shortest distance between all possible pairs of vertices.

The values in the graph matrix are updated after 'v' iterations where 'v' is the number of vertices.

Conclusion :-
Floyd-Warshall algorithm was implemented to find the shortest path between all possible pairs of vertices.