

105. Floyd algorithm

PROGRAM:

INF = 99999

```
def floyd_warshall(graph):
    V = len(graph)
    dist = list(map(lambda i: list(map(lambda j: j, i)), graph))

    for k in range(V):
        for i in range(V):
            for j in range(V):
                dist[i][j] = min(dist[i][j], dist[i][k] + dist[k][j])

    return dist

graph = [
    [0, 5, INF, 10],
    [INF, 0, 3, INF],
    [INF, INF, 0, 1],
    [INF, INF, INF, 0]
]
```

```
result = floyd_warshall(graph)
for row in result:
    print(row)
```

OUTPUT:

```
[0, 5, 8, 9]
[99999, 0, 3, 4]
[99999, 99999, 0, 1]
[99999, 99999, 99999, 0]
```

=== Code Execution Successful ===

TIME COMPLEXITY: $O(V^3)$