EXERCISE-110 Warshalls algorithm

PROGRAM

```
def warshall(graph):
    n = len(graph)
    closure = [[0] * n for _ in range(n)]
    for i in range(n):
        for j in range(n):
            closure[i][j] = graph[i][j]
    for k in range(n):
        for i in range(n):
            for j in range(n):
                closure[i][j] = closure[i][j] or (closure[i][k] and closure[k][j])
    return closure
graph = [
    [1, 1, 0, 1],
    [0, 1, 1, 0],
    [0, 0, 1, 1],
    [0, 0, 0, 1]
]
transitive_closure = warshall(graph)
for row in transitive_closure:
    print(row)
```

OUTPUT

```
======= RESTAR
[1, 1, 1, 1]
[0, 1, 1, 1]
[0, 0, 1, 1]
[0, 0, 0, 1]
```

TIME COMPLEXITY $O(n_3)$.