188. MOUSE AND CAT GAME

PROGRAM:

```
from collections import deque

def cat_mouse_game(graph):
    n = len(graph)
    DRAW, MOUSE, CAT = 0, 1, 2
    color = [[[0] * 3 for _ in range(n)] for _ in range(n)]

    q = deque()
    for i in range(1, n):
        for t in range(1, 3):
            color[0][i][t] = MOUSE
            q.append((0, i, t))

    for i in range(1, n):
        color[i][i][1] = CAT
        q.append((i, i, 1))
        color[i][i][2] = CAT
        q.append((i, i, 2))

    while q:
        x, y, t = q.popleft()
        for parent in graph[x] if t == 1 else graph[y]:
            if parent == 0:
                continue
            if t == 1:
                if color[parent][y][2] == DRAW:
                    color[parent][y][2] = CAT
                    q.append((parent, y, 2))
            else:
                if all(color[parent][child][1] == CAT for child in graph[parent]):
                    color[parent][y][1] = MOUSE
                    q.append((parent, y, 1))

    return color[1][2][1]

# Example 1
graph1 = [[2, 5], [3], [0, 4, 5], [1, 4, 5], [2, 3], [0, 2, 3]]
print(cat_mouse_game(graph1))  # Output: 0

# Example 2
graph2 = [[1, 3], [0], [3], [0, 2]]
print(cat_mouse_game(graph2))  # Output: 1
```

OUTPUT:

```
0
0

=== Code Execution Successful ===
```

TIME COMPLEXITY:O(N^2)