

### Task 1(B)

The code reads the number of courses  $N$ , prerequisite requirements  $M$ , Reads  $M$  lines containing pair  $(A, B)$ , where  $A$  must be completed before  $B$ . creates an adjacency list 'ad-1' to represent the graph. Initializes arrays for visit status, cycle detection and in-degrees. 'BFS-topol-sort' performs a breadth-first search to find a topologically sorted order of the courses. It uses a queue and keeps track of in-degrees for each course. 'cycle-detect' performs cycle detection using DFS. It marks nodes as visited during the DFS traversal and checks for back edges to detect cycles. Populates the adjacency list and in-degrees based on the prerequisite requirements. If cycles are detected, prints 'impossible' as there is no valid order. Otherwise, call the BFS-topol-sort and print the result.