21201701
Tahmid
S12

Assignment 05

Task 01

ⓐ: 'dfs' func explores the graph & finds topological order of any and all courses

'find_dfs_order' takes num of courses & prereqs as parameters. intializes an empty graph dict & holds keys → Courses
Values → prereqs

ⓑ

- 'bfs_topolsort' initializes 'in-degree' list to keep track of edges
- graph ~~B~~ dict to hold prereqs
- As mentioned, 'the output order could vary' in the Assignment
- 'toposort' checks if theres any prereqs by (in_degree = 0) And travers 'BFS'

Task 02

- 'lexico_SmallerPath' func initializes indegree for tacking edges & adj_list for courses.
- Again inits queue for no prereq courses
- stores lexicographically smallest valid course sequence in sequence list.

- The 'lexico_smallerPath' function basically checks for the courses that have no prereqs and updates with 'those prereq fulfilled.

- If valid sequence is found the returns The sequence or 'Impossible'

Task 03

- in this task we've implemented kosarajus algo to find scc.
- Finds Strongly Connected components