Green
University

Green University of Bangladesh

Department of Computer Science and Engineering

Mid Assignment

Course Title: Algorithms

Course code: CSE-205

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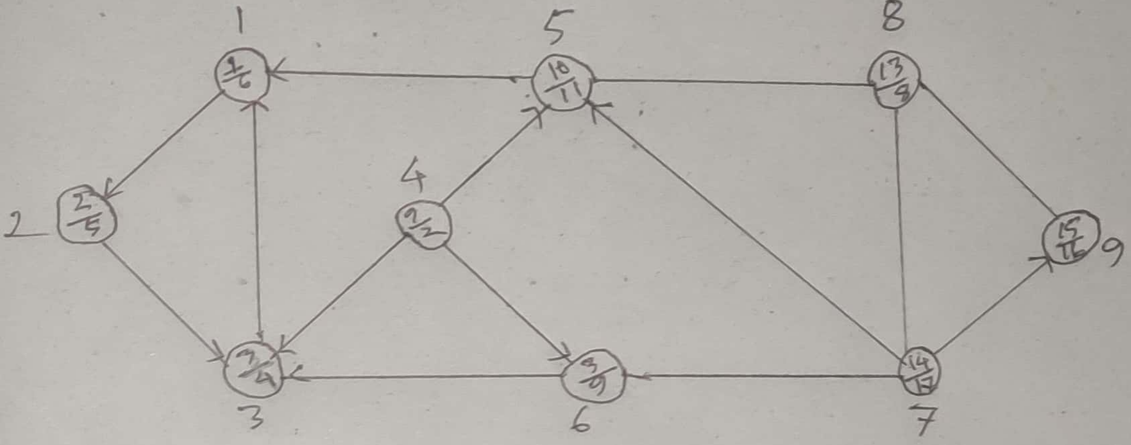
Ans to the Q.NO:1



DFs algorithm with discovery time and finishing time

time edge: Tree edge encounter new veratex.

1→2	2→3	4/5	4/6	8/7	7→9

Back edge: From desendent to ancestor

3→1	9→8

Forward edge: From ancestor to descentent.

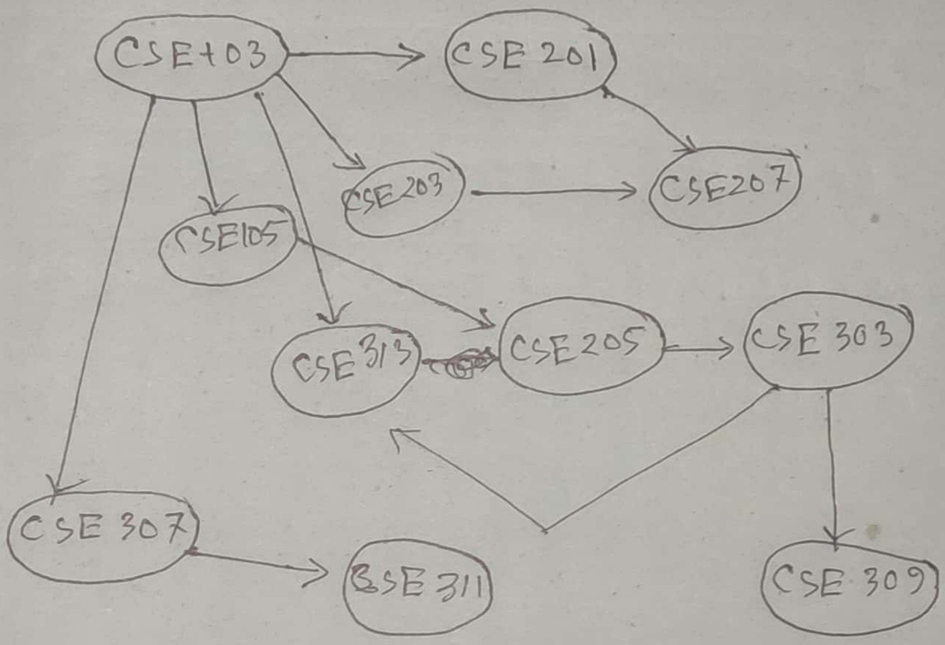
N.B: no forward edge found.

Cross edge: from ancestor to descentent Gray node to black node.

4→3	6→3	5→1	8→5	7→6	7→5

Ans to the Q.No: 2

Here, is the dependency Graph



we use Topological Sort to solve this Problem.

let every table element ~~a~~to a to r.

Course code	Prerequisite	Course code	Prerequisite
CSE 201 = a	CSE 103 = f	CSE 309 = k	CSE 205 = o
CSE 203 = b.	CSE 103 = g	CSE 311 = I	CSE 307 = P
CSE 203 = C	CSE 105 = h	CSE 313 = m	CSE 103 = q.
CSE 207 = d	CSE 203 = i	CSE ~~0~~313 = n	CSE 303 = r
CSE 303 = e	CSE 205 = j		

now Linere order on the table blew that,

f, g, q, h, a, I, b, c, j, o, d, r, e, P, k, I, m, n

CSE 103 → CSE 103 → CSE 103 → CSE 105 → CSE 201 ~~⇒~~→
→ CSE 203 → CSE 203 → CSE 203 → CSE 205 → CSE 205 → CSE 207 →
CSE 303 → CSE 303 → CSE 307 → CSE 309 → CSE 311 → CSE 313
→ CSE 313

Topological Sort Algorithm. I use to Solve the Problem.

The topological ordering can also be used to quickly compute shortest paths through a weighted directed acyclic graph.