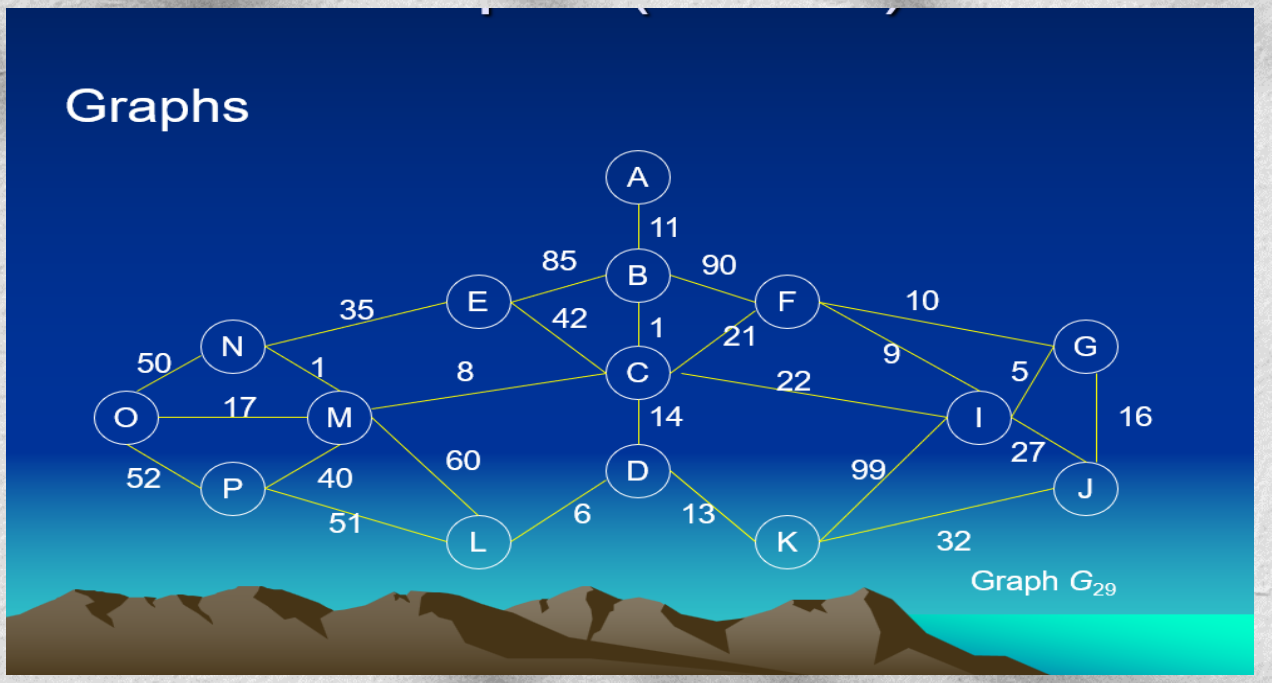
ERICKA JANE A. ALEGRE **202101777**

BSCPE 2-1 **01/ 12/ 2023**

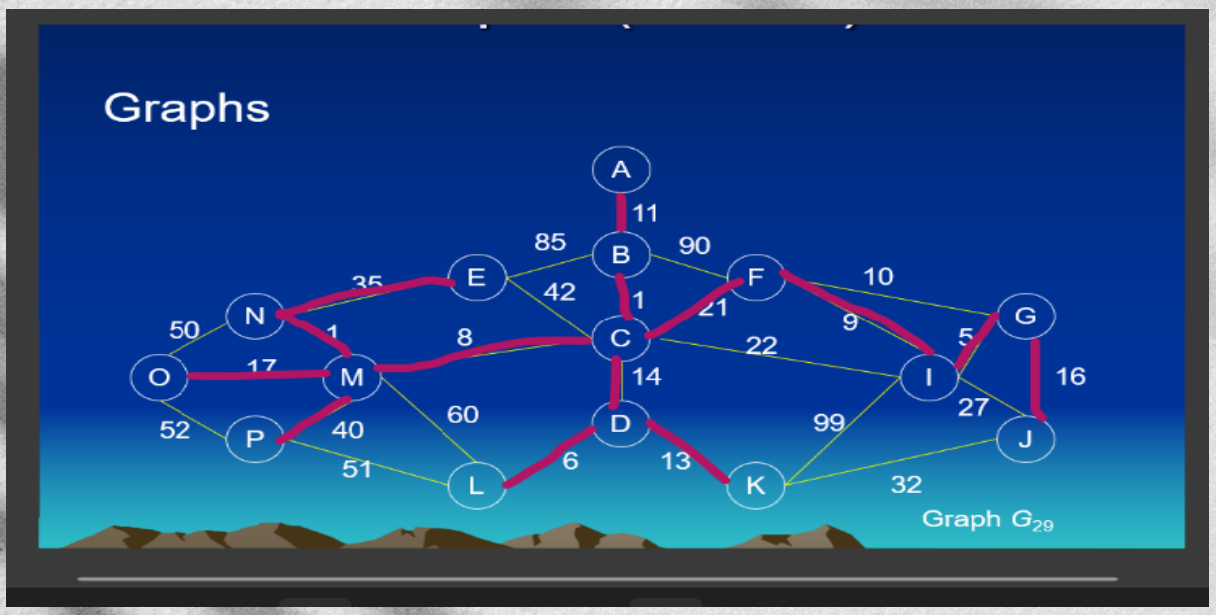
GRAPHS:

GRAPH 29:



ANSWER:

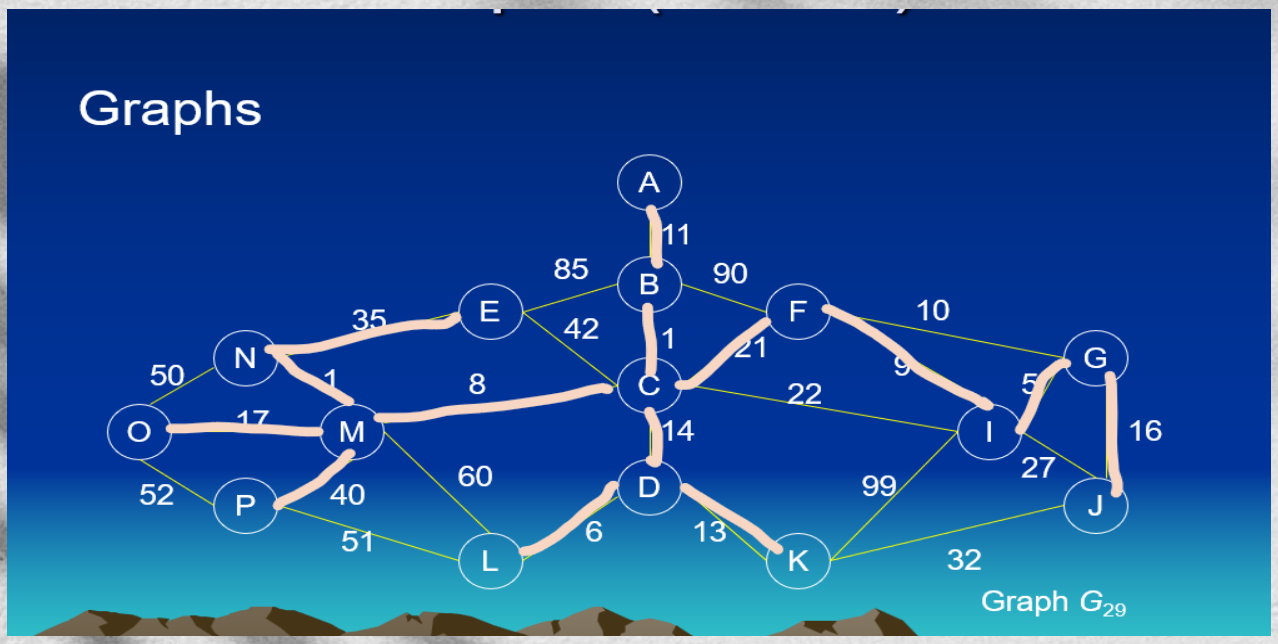
Using Kruskal's Algorithm



e (B, C)	w 1
e (M, N)	w 1
e (G, I)	w 5
e (D, L)	w 6
e (C, M)	w 8
e (F, I)	w 9
e (A, B)	w 11
e (D, K)	w 13
e (C, D)	w 14
e (G, J)	w 16
e (M, O)	w 17
e (C, F)	w 21
e (E, N)	w 35
e (M, P)	w 40

TOTAL MINIMUM SPANNING TREE: 197

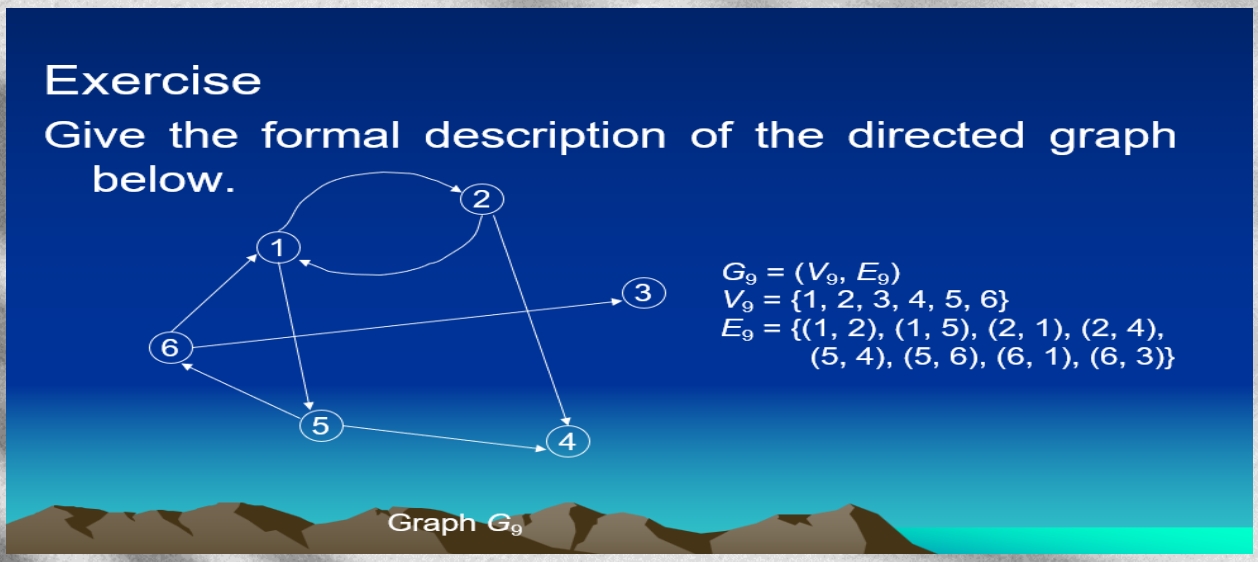
Using Prim's Algorithm



e (A, B)	w 11
e (B, C)	w 1
e (C, M)	w 8
e (M, N)	w 1
e (C, D)	w 14
e (D, L)	w 6
e (D, K)	w 13
e (M, O)	w 17
e (C, F)	w 21
e (F, I)	w 9
e (G, I)	w 5
e (G, J)	w 16
e (E, N)	w 35
e (M, P)	w 40

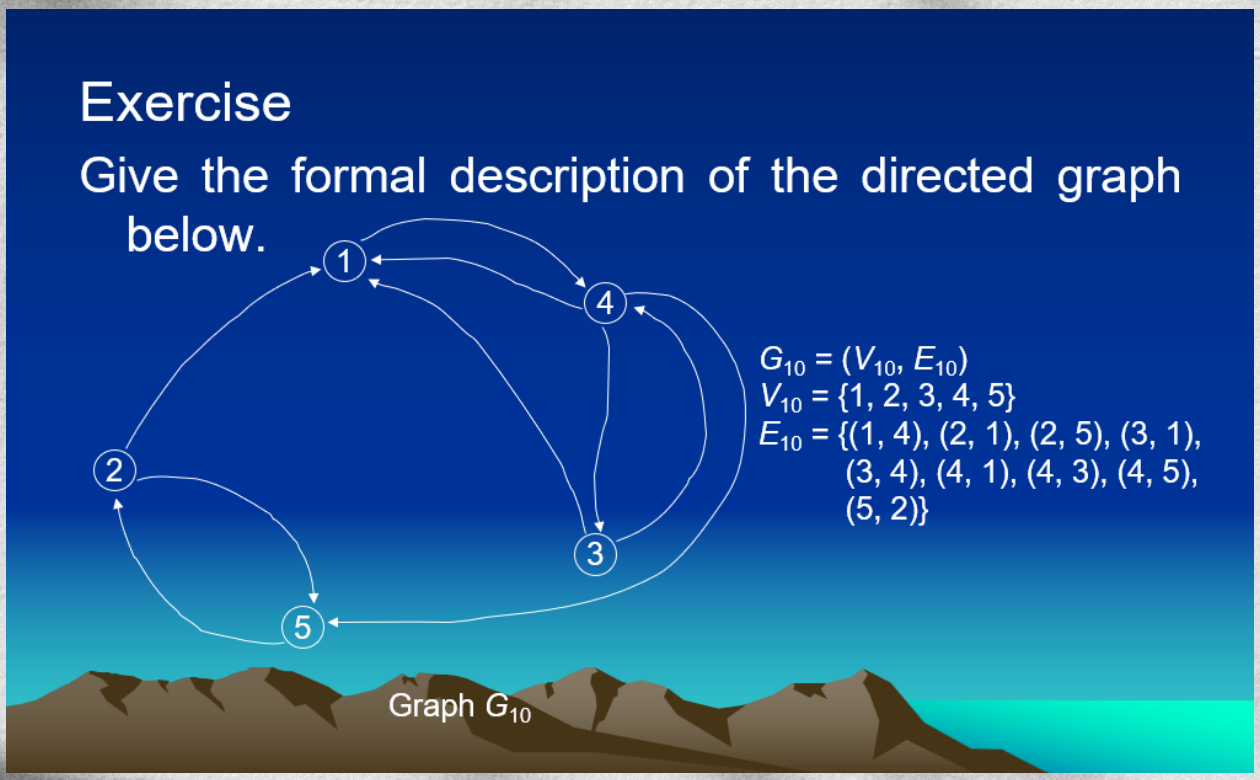
TOTAL MINIMUM SPANNING TREE: 197

Graph 9:



VERTICES	IN-DEGREE	OUT-DEGREE
1	2	2
2	1	2
3	1	0
4	2	0
5	1	2
6	1	2

Graph 10:



VERTICES	IN-DEGREE	OUT-DEGREE
1	3	1
2	1	2
3	1	2
4	2	3
5	2	1

TREES

Answer in a Short Quiz

1. Trees is a nonlinear hierarchical data structure that consists of nodes connected by edges.
2. Yes
3. Root
4. One
5. Yes
6. 13, 6, 60
7. 7
8. Has no siblings
9. 4, 12, 7, 22
10. 13, 6, 60, 23, 21
11. 23, 6, 60, 12, 4, 7, 22
12. 13, 16, 60, 12, 4, 7, 22
13. 3 (depth)
14. 3 (degree)
15. 4 (height)
16. 6 (leaves)
17. No
18. No
19. No
20. No
21. Yes
22. n^h
23. $\log_n m$
24. $\frac{n^h-1}{n-1}$
25. $n^h - 1$