# ASSIGNMENT-5 - REPORT

Observations:-

1. The routers can automatically update their routing tables based on the received information periodically, adapting to changes in network conditions such as link failures or network additions.
2. When a network change occurs, OSPF routers exchange updates to inform each other about the new state. Through the use of link-state advertisements (LSAs) and the SPF (Shortest Path First) algorithm, OSPF can rapidly calculate new paths and update routing tables. This leads to network quickly adjusting to changes, ensuring efficient and reliable communication.

Results:-

1. Network Topology :-

No. of Routers = 8 , Hello_Interval=5 , LSA_Interval=10 , SPF_Interval=20
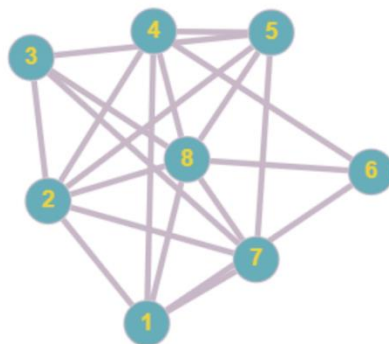
Corresponding Routing Tables after first computation :-

Router-0

DESTINATION	PATH	COST
1	0-1	5
2	0-7-6-2	9

3	0-3	1
4	0-7-4	8
5	0-5	9
6	0-7-6	3
7	0-7	2

Router-1

DESTINATION	PATH	COST
0	1-0	5
2	1-2	5
3	1-0-3	6
4	1-4	6
5	1-0-5	14
6	1-7-6	5
7	1-7	4

Router-2

DESTINATION	PATH	COST
0	2-6-0	9
1	2-1	5
3	2-6-0-3	10
4	2-4	6
5	2-6-0-5	18
6	2-6	6
7	2-6-7	7

Router-3

DESTINATION	PATH	COST
0	3-0	1
1	3-0-1	6
2	3-0-6-2	11
4	3-4	8
5	3-0-5	5
6	3-0-6	5
7	3-0-7	3

Router-4

DESTINATION	PATH	COST

0	4-7-0	8
1	4-1	6
2	4-2	6
3	4-3	8
5	4-7-0-5	17
6	4-7-6	7
7	4-7	6

Router-5

DESTINATION	PATH	COST
0	5-0	4
1	5-0-1	9
2	5-0-6-2	14
3	5-0-3	5
4	5-0-7-4	12
6	5-0-6	8
7	5-0-7	6

Router-6

DESTINATION	PATH	COST
0	6-0	3
1	6-7-1	5
2	6-2	6
3	6-0-3	4
4	6-7-4	7
5	6-0-5	12
7	6-7	1

Router-7

DESTINATION	PATH	COST
0	7-0	2
1	7-1	4
2	7-6-2	8
3	7-0-3	3
4	7-4	6
5	7-0-5	6
6	7-6	1

Router-8

DESTINATION	PATH	COST
1	0-1	5
2	0-7-6-2	9
3	0-3	1
4	0-7-4	8
5	0-5	9
6	0-7-6	3
7	0-7	2

Router-9

DESTINATION	PATH	COST
1	0-1	5
2	0-7-6-2	9
3	0-3	1
4	0-7-4	8
5	0-5	9
6	0-7-6	3
7	0-7	2

2. Network Topology :-

No. of Routers = 10 , Hello_Interval=5 , LSA_Interval=10 , SPF_Interval=20
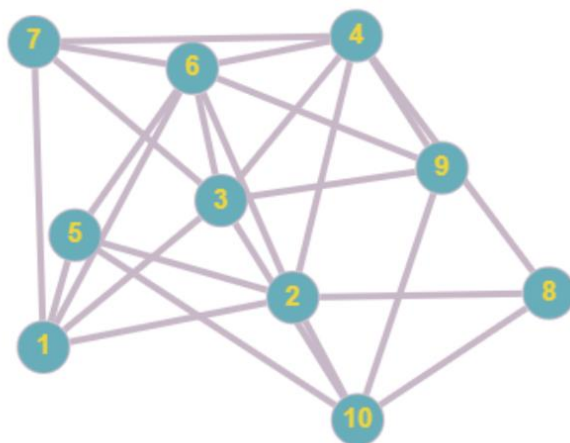
Corresponding Routing Tables after first computation :-

Router-0

DESTINATION	PATH	COST
1	0-1	4
2	0-2	5
3	0-1-3	9
4	0-4	3
5	0-5	6
6	0-2-6	6
7	0-1-9-7	8
8	0-2-8	15
9	0-1-9	5

Router-1

DESTINATION	PATH	COST
0	1-0	4
2	1-9-2	4
3	1-3	5
4	1-9-4	4
5	1-9-4-5	10
6	1-9-2-6	5
7	1-9-7	4
8	1-9-8	14
9	1-9	1

Router-2

DESTINATION	PATH	COST
0	2-0	5
1	2-9-1	8
3	2-3	5
4	2-0-4	6
5	2-6-5	7
6	2-6	1
7	2-9-7	10
8	2-8	8
9	2-9	7

Router-3

DESTINATION	PATH	COST

0	3-1-0	8
1	3-1	4
2	3-2	5
4	3-1-9-4	7
5	3-5	11
6	3-2-6	6
7	3-1-9-7	8
8	3-8	7
9	3-1-9	5

Router-4

DESTINATION	PATH	COST
0	4-0	1
1	4-9-1	3
2	4-0-2	6
3	4-9-1-3	7
5	4-5	7
6	4-0-2-6	7
7	4-9-7	5
8	4-0-2-8	14
9	4-9	2

Router-5

DESTINATION	PATH	COST
0	5-0	6
1	5-0-1	10
2	5-6-2	6
3	5-3	11
4	5-4	16
6	5-6	5
7	5-4-9-7	12
8	5-8	9
9	5-4-9	9

Router-6

DESTINATION	PATH	COST
0	6-2-0	6
1	6-2-9-1	7
2	6-2	1

3	6-2-3	6
4	6-2-0-4	7
5	6-5	6
7	6-2-9-7	8
8	6-2-8	10
9	6-2-9	5

Router-7

DESTINATION	PATH	COST
0	7-9-4-0	7
1	7-9-1	5
2	7-9-2	7
3	7-3	9
4	7-9-4	6
5	7-9-4-5	13
6	7-9-2-6	8
8	7-9-8	15
9	7-9	3

Router-8

DESTINATION	PATH	COST
0	8-2-0	14
1	8-3-1	13
2	8-2	9
3	8-3	9
4	8-9-4	15
5	8-5	10
6	8-2-6	10
7	8-9-7	15
9	8-9	12

Router-9

DESTINATION	PATH	COST
0	9-4-0	4
1	9-1	2
2	9-2	4
3	9-1-3	6
4	9-4	3
5	9-4-5	9

6	9-2-6	5
7	9-7	3
8	9-8	12