

**TestCase1:****Input:**

9  
11  
0,1,6,a1  
0,2,4,a2  
0,3,5,a3  
1,4,1,a4  
2,4,1,a5  
3,5,2,a6  
4,6,9,a7  
4,7,7,a8  
5,7,4,a9  
6,8,2,a10  
7,8,4,a11

**Output**

The earliest time that each event may occur is listed below:

Event 0 : 0 unit time  
Event 1 : 6 unit time  
Event 2 : 4 unit time  
Event 3 : 5 unit time  
Event 4 : 7 unit time  
Event 5 : 7 unit time  
Event 6 : 16 unit time  
Event 7 : 14 unit time  
Event 8 : 18 unit time

The latest time for each event is listed below:

Event 0 : 0 unit time  
Event 1 : 6 unit time  
Event 2 : 6 unit time  
Event 3 : 8 unit time  
Event 4 : 7 unit time  
Event 5 : 10 unit time  
Event 6 : 16 unit time  
Event 7 : 14 unit time  
Event 8 : 18 unit time

Following are the critical events:

Event 0  
Event 1  
Event 4

Event 6  
Event 7  
Event 8

The following is the list of critical activities for each critical path:

a1 a4 a7 a10

a1 a4 a8 a11

The longest path in this activity network has a duration of:

18 unit time

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### **TestCase2:**

#### **Input**

12

15

0,1,6,a1

0,2,4,a2

0,3,5,a3

1,4,1,a4

2,4,1,a5

3,5,2,a6

4,6,9,a7

4,7,7,a8

5,7,4,a9

6,8,2,a10

7,8,4,a11

8,9,1,a12

8,10,1,a13

9,11,1,a14

10,11,1,a15

#### **Output**

Early event start time for each event are as mentioned below:

0 6 4 5 7 7 16 14 18 19 19 20

Late event start time for each event are as mentioned below:

0 6 6 8 7 10 16 14 18 19 19 20

Following are the critical events:

0 1 4 6 7 8 9 10 11

Longest Path has distance:20

Critical path activities:

a1 a4 a7 a10 a12 a14  
a1 a4 a7 a10 a13 a15  
a1 a4 a8 a11 a12 a14  
a1 a4 a8 a11 a13 a15

The earliest time that each event may occur is listed below:

Event 0 : 0 unit time  
Event 1 : 6 unit time  
Event 2 : 4 unit time  
Event 3 : 5 unit time  
Event 4 : 7 unit time  
Event 5 : 7 unit time  
Event 6 : 16 unit time  
Event 7 : 14 unit time  
Event 8 : 18 unit time  
Event 9 : 19 unit time  
Event 10 : 19 unit time  
Event 11 : 20 unit time

The latest time for each event is listed below:

Event 0 : 0 unit time  
Event 1 : 6 unit time  
Event 2 : 6 unit time  
Event 3 : 8 unit time  
Event 4 : 7 unit time  
Event 5 : 10 unit time  
Event 6 : 16 unit time  
Event 7 : 14 unit time  
Event 8 : 18 unit time  
Event 9 : 19 unit time  
Event 10 : 19 unit time  
Event 11 : 20 unit time

Following are the critical events:

Event 0  
Event 1  
Event 4  
Event 6  
Event 7  
Event 8  
Event 9  
Event 10  
Event 11

The following is the list of critical activities for each critical path:

a1 a4 a7 a10 a12 a14

a1 a4 a7 a10 a13 a15

a1 a4 a8 a11 a12 a14

a1 a4 a8 a11 a13 a15

The longest path in this activity network has a duration of:

20 unit time

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### **TestCase3**

#### **Input**

4

4

0,1,1,a1

1,2,1,a2

2,3,1,a3

3,0,1,a4

#### **Output:**

The earliest time that each event may occur is listed below:

Event 0 : 4 unit time

Event 1 : 1 unit time

Event 2 : 2 unit time

Event 3 : 3 unit time

The latest time for each event is listed below:

Event 0 : -1 unit time

Event 1 : 0 unit time

Event 2 : 1 unit time

Event 3 : 2 unit time

Following are the critical events:

No critical events. The given input is not a DAG.

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#### **TestCase4:**

##### **Input:**

5  
6  
0,1,6,a1  
0,2,5,a2  
1,4,8,a3  
2,3,5,a4  
1,3,5,a5  
3,4,2,a6

##### **Output:**

The earliest time that each event may occur is listed below:

Event 0 : 0 unit time  
Event 1 : 6 unit time  
Event 2 : 5 unit time  
Event 3 : 11 unit time  
Event 4 : 14 unit time

The latest time for each event is listed below:

Event 0 : 0 unit time  
Event 1 : 6 unit time  
Event 2 : 7 unit time  
Event 3 : 12 unit time  
Event 4 : 14 unit time

Following are the critical events:

Event 0  
Event 1  
Event 4

The following is the list of critical activities for each critical path:

a1 a3

The longest path in this activity network has a duration of:

14 unit time

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