

**BT20CSE024\_Sudhanshu Bokade**

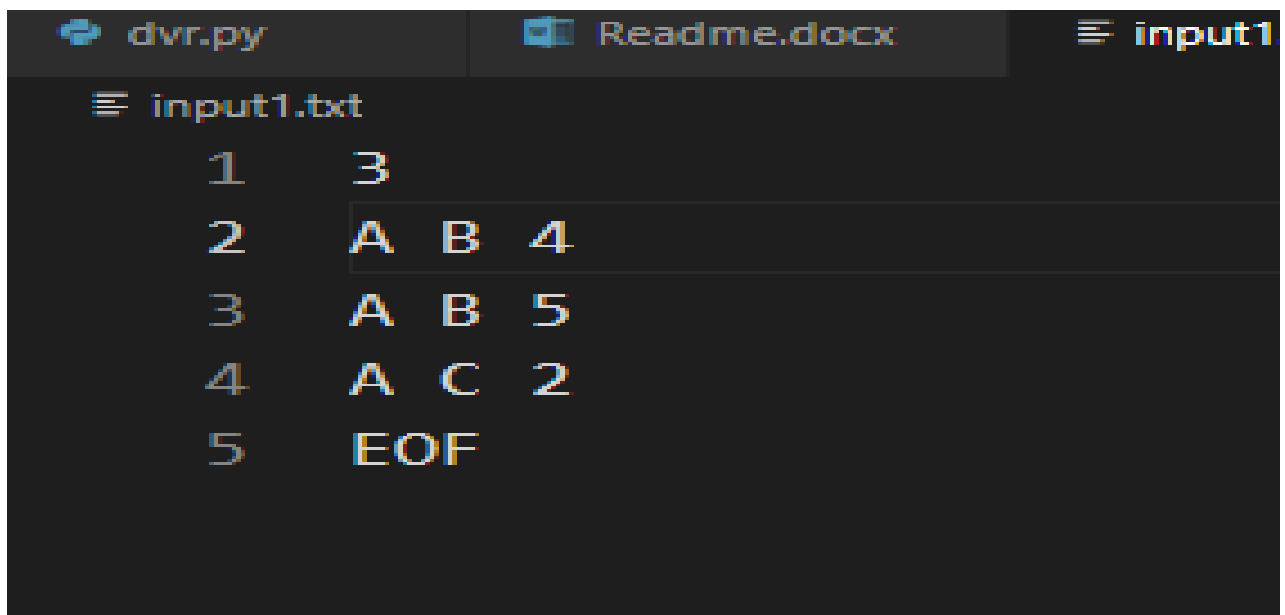
**CN Assignment-no :3**

***Distance Vector Routing implementation using Bellman Ford  
Algorithm In Python***

Commands to execute the dvr.py file

python dvr.py inp.txt (where inp.txt is name of input file to be read)

Input1:



```
dvr.py  Readme.docx  input1.txt
input1.txt
1    3
2    A B 4
3    A B 5
4    A C 2
5    EOF
```

```
view Go Run Terminal Help
dvr.py Readme.docx Input1.txt x Input2.txt Input3.txt
Input1.txt
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
-----Begin-----
ROUTER: A
Destination Cost Next Router
A 0 A
B 5.0 B
C 2.0 C

ROUTER: B
Destination Cost Next Router
A 5.0 A
B 0 B
C inf NA

ROUTER: C
Destination Cost Next Router
A 2.0 A
B inf NA
C 0 C

<-----Iteration 1----->
ROUTER: A
Destination Cost Next Router
A 0 A
B 5.0 B
C 2.0 C

ROUTER: B
Destination Cost Next Router
A 5.0 A
B 0 B
* C 7.0 A

ROUTER: C
Destination Cost Next Router
A 2.0 A
* B 7.0 A
C 0 C

<-----Iteration 2----->
ROUTER: A
Destination Cost Next Router
A 0 A
B 5.0 B
C 2.0 C

ROUTER: B
Destination Cost Next Router
A 5.0 A
B 0 B
C 7.0 A
```

```
ROUTER: C
Destination Cost Next Router
A 2.0 A
* B 7.0 A
C 0 C
```

```
<-----Iteration 3----->
ROUTER: A
Destination Cost Next Router
A 0 A
B 5.0 B
C 2.0 C

ROUTER: B
Destination Cost Next Router
A 5.0 A
B 0 B
C 7.0 A

ROUTER: C
Destination Cost Next Router
A 2.0 A
B 7.0 A
C 0 C

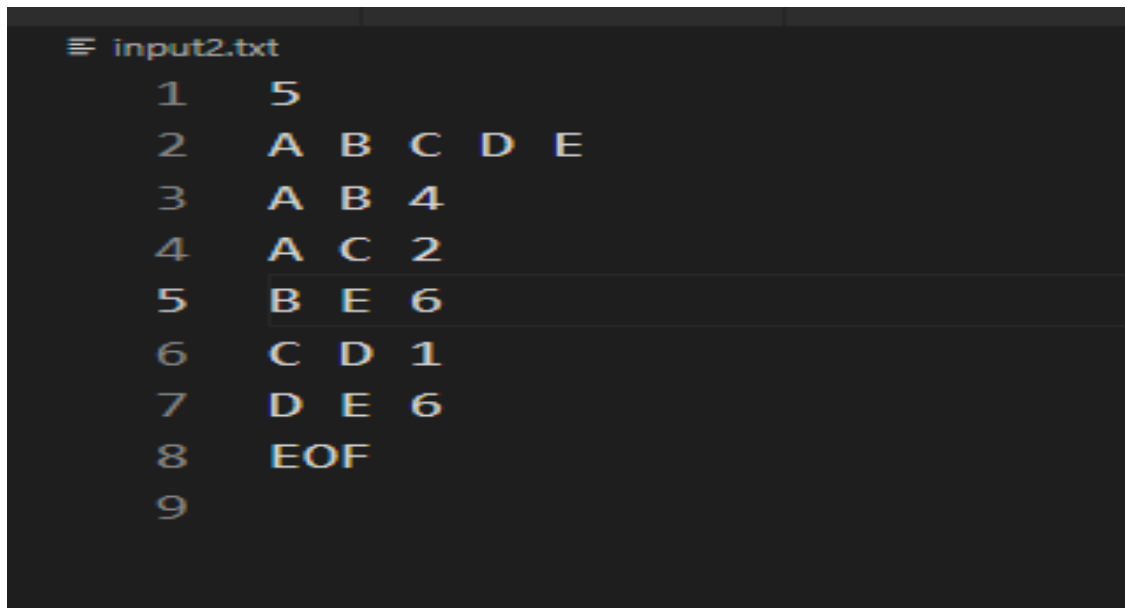
<-----Iteration 4----->
ROUTER: A
Destination Cost Next Router
A 5.0 A
B 0 B
C 7.0 A

ROUTER: C
Destination Cost Next Router
A 2.0 A
B 7.0 A
C 0 C

PS C:\Users\SUDHANSHU BOKADE\Desktop\CN\BT20CSE024_Sudhanshu_DVR>
```

Since , Output is very long ,I am showing only end iteration(result) for next testcases. Details of each iteration can be checked by executing code itself.

Input2.txt



```
input2.txt
1 5
2 A B C D E
3 A B 4
4 A C 2
5 B E 6
6 C D 1
7 D E 6
8 EOF
9
```

Output:

```

-----Iteration 3-----

ROUTER: A
Destination Cost      Next Router
A           0          A
B           4.0        B
C           2.0        C
D           3.0        C
E           9.0        C

ROUTER: B
Destination Cost      Next Router
A           4.0        A
B           0          B
C           6.0        A
D           7.0        A
E           6.0        E

ROUTER: C
Destination Cost      Next Router
A           2.0        A
B           6.0        A
C           0          C
D           1.0        D
E           7.0        D
C           0          C
D           1.0        D
E           7.0        D

ROUTER: D
Destination Cost      Next Router
A           3.0        C
B           7.0        C
C           1.0        C
D           0          D
E           6.0        E

ROUTER: E
Destination Cost      Next Router
A           9.0        D
B           6.0        B
C           7.0        D
D           6.0        D
E           0          E

```

Input3.txt

```

≡ input3.txt
1      6
2      A B C D E F
3      A B 6
4      A C 3
5      B C 3
6      D E 1
7      D F 5
8      E F 4
9      B D 7
10     C E 9
11     EOF

```

Output:

```
<-----Iteration 4----->

ROUTER: A
Destination Cost Next Router
A 0 A
B 6.0 B
Destination Cost Next Router
A 6.0 A
B 0 B
C 3.0 C
D 7.0 D
E 8.0 D
F 12.0 D

ROUTER: C
Destination Cost Next Router
A 3.0 A
B 3.0 B
C 0 C
D 10.0 B
E 9.0 E
F 13.0 E

ROUTER: D
Destination Cost Next Router
A 13.0 B
B 7.0 B
C 10.0 B
D 0 D
E 1.0 E
F 5.0 F

ROUTER: E
Destination Cost Next Router
A 12.0 C
B 8.0 D
C 9.0 C
D 1.0 D
E 0 E
F 4.0 F

ROUTER: F
Destination Cost Next Router
A 16.0 E
B 12.0 D
C 13.0 E
D 5.0 D
E 4.0 E
F 0 F

PS C:\Users\SUDHANSHU BOKADE\Desktop\CN\BT20CSE024_Sudhanshu_DVR>
```

Input 4:

```
input4.txt
1 5
2 A B C D E
3 A B 3
4 B D 4
5 D E 5
6 C E 6
7 C D 7
8 EOF
```

Output:

<-----Iteration 3----->

ROUTER: A

Destination	Cost	Next	Router
A	0	A	
B	3.0	B	
C	14.0	B	
D	7.0	B	
E	12.0	B	

ROUTER: B

Destination	Cost	Next	Router
A	3.0	A	
B	0	B	
C	11.0	D	
D	4.0	D	
E	9.0	D	

ROUTER: C

Destination	Cost	Next	Router
A	14.0	D	
B	11.0	D	
C	0	C	
D	7.0	D	
E	6.0	E	

ROUTER: D

Destination	Cost	Next	Router
A	7.0	B	
B	4.0	B	
C	7.0	C	
D	0	D	
E	5.0	E	

ROUTER: E

Destination	Cost	Next	Router
A	12.0	D	
B	9.0	D	
C	6.0	C	
D	5.0	D	
E	0	E	
E	5.0	E	

ROUTER: E

Destination	Cost	Next	Router
A	12.0	D	
B	9.0	D	
C	6.0	C	
D	5.0	D	
E	0	E	