

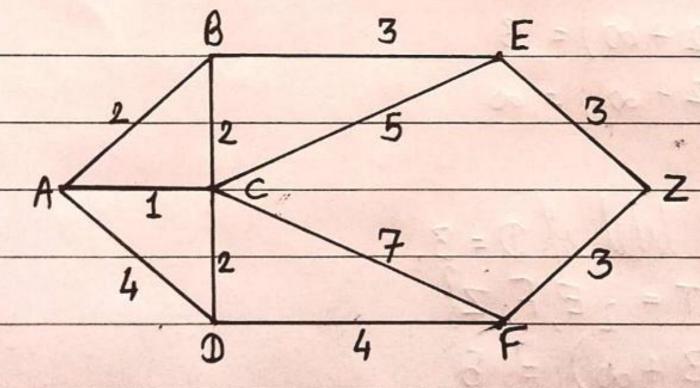
Name: - Shaustubh Shrikant Habra.

Class: - Second Year Engineering.

Roll Mumber: -

Department: - lomputer Department lollege: - AISSMS's IOIT.

Use Dijkstra's algorithm to find the shortest path between A and z in figure



According to Dijkstra's algorithm, the shortest path between A and z can be calculated as follows:-

1.
$$P = \emptyset$$
, $T = \{A, B, C, D, E, F, Z\}$
 $L(A) = \emptyset$, $L(\alpha) = \infty$ $\forall \alpha \in T$, $\alpha \neq A$

2.
$$V = A$$
, the permanent label of $A = 0$.
 $P = \{A\}$, $T = \{B,C,D,E,F,Z\}$

$$P = \{A\}, T = \{B,C,D,E,F,Z\}$$

$$I(B) = \min\{C,C,D,E,F,Z\}$$

$$L(B) = \min \left(0, 0 + 2 \right) = 2$$

$$L(F) = \min \left(0, 0 + \infty \right) = 0$$

$$L(C) = \min \left(0, 0 + 1 \right) = 1$$

$$L(Z) = \min \left(0, 0 + \infty \right) = \infty$$

$$L(c) = min (\infty, 0+1) = 1$$

 $L(D) = min (\infty, 0+4) = 4$

$$L(E) = min(\infty, 0 + 6) = 2$$

						Page:			ALC: CORD PAR
									-
3. V=C, the permanent lated of C=1		A	В	C	D	E	F	Z	-
P = {A,C}, T = {B,D,E,F,Z}	A	OA	2	1 _A	4 _A	00	00	20	
L(B) = min(2, 1+2) = 2	C		2 _A	1 _A	3c	60	80	∞)	ere e
L(D) = min (4, 1+2) = 3	B		2_A		30	5 _B	80	80	_
$L(E) = min \left(0, 1 + 5 \right) = 6$	0				30	58	70	∞	
L(F) = min(0)1+7 = 8	E					58	70	8E	
$L(z) = \min \left(\infty, 1 + \infty \right) = \infty$	F						7	8E	
	Z		2816				1	8E	
4. V=B, the permanent label of B = 2.									-
P={A,C,B} T={DEFZ}									17
$L(D) = min(3(2+\infty)=3$						Salli			
L(E) = min (6, 2+3) = 5									
L(F) = min (8, 2+00) = 8									
$L(z) = min(0, 2+\infty) = \infty$									
5. V= D, the permant libel of D=3.									
P= {ACBD} T= {EFZ}									
L(E) = min(5, 3+00) = 5		0		T-					
L(F) = min(8, 3+4) = 7	a dun					No.			
$L(z) = min(\infty, 3 + \infty) = \infty$		Ziwita			X				
6. V = E, the perment libel of E = 5		78		=7-					
P={A, C, B, D, E}, T={F, Z}			- (1)			Take 1			
I(F) = min(57 5 + 0) = 7		The same of							The second
L(F) = min(37, 5+00) = 7 L(z) = min(30, 5+3) = 8									
Thui Contract of the second of							No.		
7 V- F the normant labor N F-7			WE TO						-
7. $V=F$ the permant label of $F=7$ $P=\{A,C,B,D,E,F\},T=\{z\}$		V				AGE .			+
$1 = \{A, C, D, D, E, \Gamma\}, \Gamma = \{Z\}$									+
L(z) = min(8,7+3) = 8	1	и.							+
The shortest path length from A to Z is 8] o	and pa	IN IS A	→ B	→ E	₹.				