



دستورالعمل برنامه ریزی به روش مسیر بحرانی (C.P.M)



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(Critical path method)

(Flow – Line method)

(PERT)

C. P. M

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C. P. M.

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(C.P. M.)

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(...)

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(...) (

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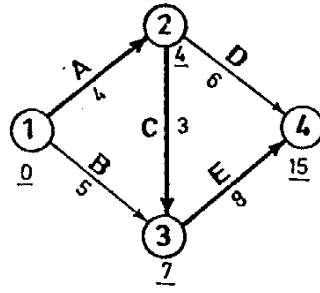
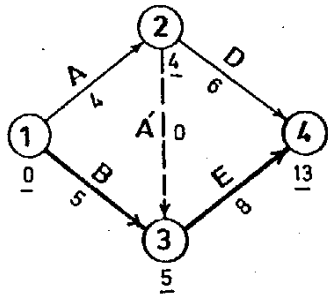
() ()

E, D, C, B,A

B A

A D C

E C B



()

+ + = E C A

B A

E

()

C

C

+ = E B

... - - :

()

$$EF = ES + D$$

D
ES
EF

LS

LF

$$LF = LS + D$$

TF

« »

()

$$TF = LF - EF = LS - ES$$

B

+ =

C A

B

B

=

B

EF

$$EF = (\quad ES) - (\quad EF)$$

E C A () .

: (C. P. M.)

:

() .

:

)

(...

()

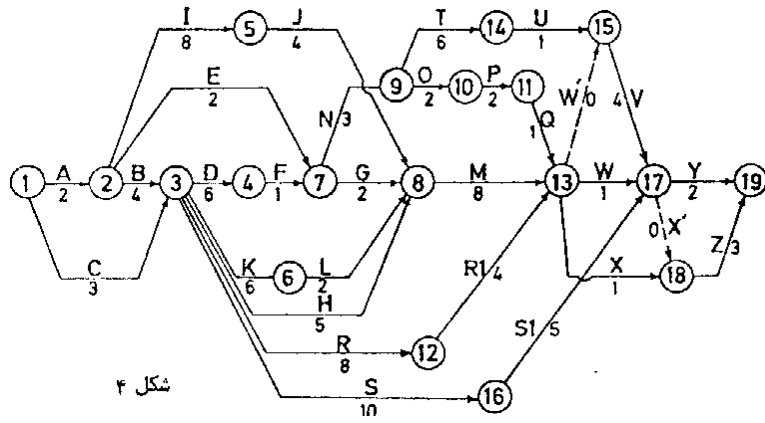
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.()

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C	I,E,B		2		A
I,C	S,R,H,K,D	A	4		B
B,A	S,R,H,K,D		3		C
S,R,H,K,J,I	F	C,B	6		D
S,R,H,L,F,J	N,G	A	2		E
S,R,H,L,J,E	N,G	D	1		F
S,R,H,L,N,J	M	F,E	2		G
R,H,G,F,D,E	M	C,B	5		H
S,R,H,K,C,D ,B	J	A	8		I
H,L,F,G,N,E	M	I	4		J
S,R,H,D,I	L	C,O	6		K
S,H,R,G,N,J	M	K	2		L
S,R,O,P,Q,N, T	X,W	H,L,G,J	8		M
S,R,H,L,G,J	O,T	F,E	3		N
S,R,M,T	P	N	2		O
S,R,M,T	Q	O	2		P
S,R,M,T	X,W	P	1		Q
U,.....,D	X,W	C,B	12		R,R ₁
X,.....,D	X,Y	C,B	15		S,S ₁
S,R,M,O	U	N	6		T
S,R,N,Q,P	V	T	1		U
X',W,S	X',Y	U	4		V
X,S,V	X',Y	Q,M,R	1		W
S,X',W,V	Z	Q,M,R	1		X
Z,X		W,V,S	2		Y
Y		X',X	3		Z

()



V ()

Q U

W'

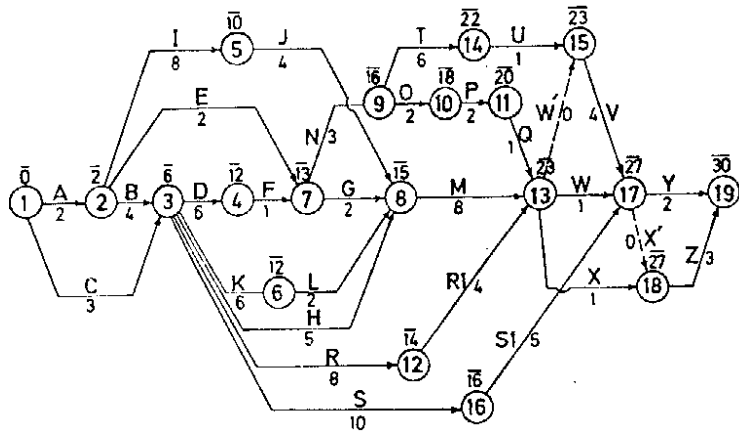
()

ES
Q () R1,M,Q
M
RI
ES

()

ES

()



LS

(ES) ()

(LS)

LS ()
(D)

LS .

LS
B,E I

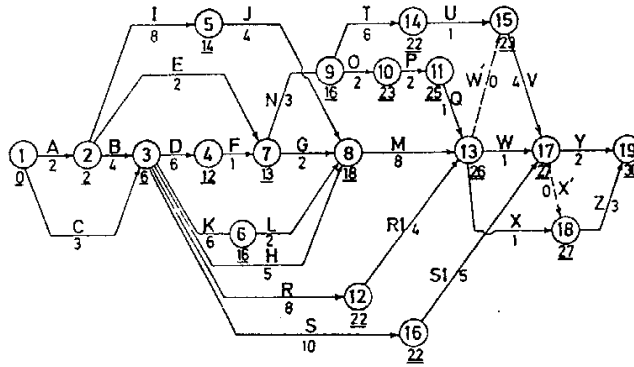
()

= = =

() .

ES

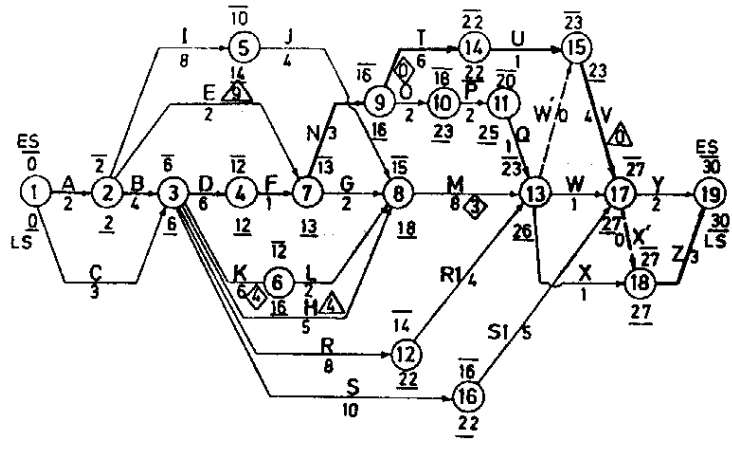
LS



()

LS,ES

Z, X', V, U, T, N, F, D, B, A ()



EF

() EF = ES + D

16 + = T 12 + = L

LF

L

()

LF = LS + D

16 + = T 16 + =

FF

ES

FF = (ES) (EF)

FF = [(ES) (ES)] D

FF = (13 - 2) = E ()

FF = (27 - 23) = V FF = (15 - 6) = H

△

TF

K

()

TF = LF - EF = LS - ES

T

TF = (26 - 23) = M

TF = (16 - 12) =

TF = (22 - 22) =

◇

AC	EV		D	ES	EF	LS	LF	TF	EF
A*	1	2	2	0	2	0	2	0	0
B*	2	3	4	2	6	2	6	0	0
C	1	3	3	0	3	3	6	3	3
D*	3	4	6	6	12	6	12	0	0
E	2	7	2	2	4	11	13	9	9
F*	4	7	1	12	13	12	13	0	0
G	7	8	2	13	15	16	18	3	0
H	3	8	5	6	11	13	18	7	4
I	2	5	8	2	10	6	14	4	0
J	5	8	4	10	14	14	18	4	1
K	3	6	6	6	12	10	16	4	0
L	6	8	2	12	14	16	18	4	1
M	8	13	8	15	23	18	26	3	0
N	7	9	3	13	16	13	16	0	0
O	9	10	2	16	18	21	23	5	0
P	10	11	2	18	20	23	25	5	0
Q	11	13	1	20	21	25	26	5	2
R _l	3	12	8	6	14	14	22	8	0
R	12	13	4	14	18	22	26	8	5
S _l	3	16	10	6	16	12	22	6	0
S	16	17	5	16	21	22	27	6	6
T*	9	14	6	16	22	16	22	0	0
U*	14	15	1	22	23	22	23	0	0
V*	15	17	4	23	27	23	27	0	0
W	13	17	1	23	24	26	27	3	3
W	13	15	0	23	23	23	23	0	0
X*	13	18	1	23	24	26	27	3	3
X	17	18	0	27	27	27	27	0	0
Y	17	19	2	27	29	28	30	1	1
Z*	18	19	3	27	30	27	30	0	0

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1. LOCKYER, K. G. AN INTRODUCTION TO CRITICAL PATH ANALYSIS. PITMAN PUBLISHING CORP. NEW YORK.
2. ANTIL, JAMES M & C WOODHEAD RONALD W, CRITICAL INSTRUCTION PRACTICE. JOHN WILEY & SONS INC. NEW YORK.
3. CRITICAL PATH METHOD OF WORK SCHEDULING ROBERT U. OLSON.

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