were torst U.o. thoras pero is ashar more. (0) Hour The rest 100000 to 10000000 to V to E went to describe vertices `` ~ I C -1 042/1921 O  $\mathbb{O}$ -2 0,0 71, O -2 O O D O ( [minincho) 3/12/6 

SUYF MOULSY

(De bol Box V. republika) I LAMINATIET

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	Roud-K	Colton	DK13	Dt[2]	(57/01	DK[H)	Dk[	if beled
in the second	1	0	G	5	5	D	N	20
-	2	0	3	3	5	5	14	20
kumm	3	0	•	3	5	2	н	5
1	16	0	1	3	5	0	Н	3
	5	O		3	5	0	Н	3
1	6	D	1	3		0	ц	3

The algorithm will applie the distance which is optimal in each round.

10) Written separately & attached.

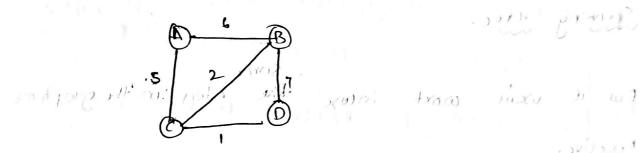
Minimum Sponning Tree:

It all edger of a graph are positive then any subscrop the edgerthat connect all vertices in the graph and has minimum weight in total should be a tree.

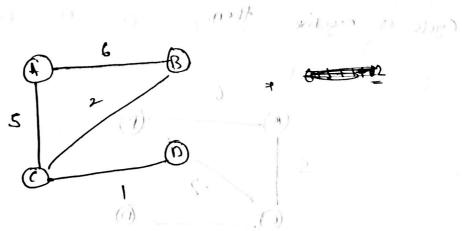
Andrew for a son it is told of

In a subgraph if it does not have loops tot) (yell and connect) all vertices with minimum weight can be a tree.

Consider the following example who sould talk as not do



The minimal weight in total is obtained when all the nodes arequested as follows and has a Cycle



Total weight = 6+5+2+1

= 14 3 to Ministration 102

But It is not a tree. ix ( por 10 ) mon and Lett drop the edge that is forming a cycle. produce pro with wind on a porte of the not be Liongo por Com B Ho mirand localization with 1. 1 med 55 alliands later of the interminent port (1) - but aby (10 year soon for 100 deported a ret Total weight = 6+5+1 whore on the mentan - and the the thornes We can see that these edges connect all nodes with minimum Possible total weight . so, the above graph is a minimum Sponking tree. But it won't work income the edger in the grouph one regative. , no obor orthugantly Emildo & lotos For example in the same enample if the edge motting a and por sond proposition of the sone Cycle is negative then. (8) - (1) 1+3+2+2 Hipines losof

so, Totalweight: 6+5-2+1=10.

But this is smoller than - @ so it work be minimum sponning tree it the edger on negotive. El months dens brusen at in mart dutures stou as) regles I wire between committee adject the between Let Check whether the verter pair vand u are reachank wing depth first search organithm, we will travouse graph (G1). from verten u ond more all that one reachable from u. It vis monked as wilited then it reachable from u. Algorithm. (SREACHABLE, (U, V, Visited , G) if U== V retuin True all all () visited (u) = true 2101000 0 for ortragent in Great: if not visited (adjacent) it ISREACHABLE (adjacent, v, visited, G)

return The

return False

Complementy. It is have to all the pollower in full that

As the procedure Uncets all adarent noder from away node starting from a. In worst case scenario it should emplore Vvortices connected with Eedger. So,

The Complexity would be O(V+E)

Given, some students need to posticipate in an otheric event which is represented as a graph where nodes are connected if the events have no time conflict.

(b)0 m - () str) U rly = (r sfr) ITY

Implementation:

Let Statent-Enrolled-Event be an input which contains the information of the student removaled events in the athletice. We are iterating through all the student events and for each event we will check whather the convent event is in the list of event in the groph alled Graph-Adjacenty List which represent nodes & it connected nodes with no time.

Conflict. ()

So, it the student enrolled events has conflict we will

return table on we will return true.

Algorithm :-

EVENTTIME CONFLICT ( Student-Enrolled-Eventy)

Graph-Adjacency\_List = { A:[c], B:[f], C:[A,D], D:[c,E], E:[D],

F: [8,0]}

for each event in Student-Enrolled-Event:

for each event-other (in student-Enrolled-Eventh:

if event-other = = event:

Continue

if event-Other not in Graph-Asjaconcy-List[event]:

return F

retern T.