

18

16

Task	Joh	School	poilor	Algo	oditho
-			-	-	

- H Task Scheduling Problem is the problem of optimally schediling unit time takes on a single processors, where each task has a

- For the solution of this we can apply greedy

- In a task scheduling problem a "unit - time task" is a job, run on a computer.

Example

Let n=9 (T1, T2, T3, --- Tg

Deadlines (7,2,5,3,4,5,2,7,3 Profit (15,20,30, 18, 18,10,23,16,25

Find the optimal Solo

Deadlines lasks

15 TI

20 30

3 18

20

23 7

25

-> Now averange the table in decreasing o of their profit Profit Tasks Deadline Ta Now we will allocate the time as per their deadlines to the task 

The deadline is 5 -> iVeat we select task To with deadline > Next task Tx is selected with deadline Task T2 is selected.

Task T2 is having deadline 2 and 1-2 slot
is already allocated to T7. Thus, To will be allocated from 0-1 -> Now task Tu is having deadline 3.

But as shown in fig all the time slots
from 0-3 are occupied. Thus, we will eliminate task Ty -> Now task To is selected with deadline -> Now task To is selected with deadline -> Now task To is selected with deadline 7. But (6-7) time slot is already occupied.
Thus, Tr will be give slot (5-6)





- Now all the time slots are occupied thus Task no. 6 i.e. To will be eliminated

Selected Tasks

Task Deadline Profit

13 5 30 Tg 13/11/2 25/2

TT 2 ( 70 2 00) 00 VO 28

T2 24 halfanni 20

Ts 4 18

7 15

1 Ly Te

Thus, total profit incurated is 147

Hetivity Se	election B	noblem	
Points to sieme	when (2	(2-6+	
81(11)		reba	
ton this along	\	1	
their Starting to	1 me pare	a list of activ	vities with
men Starting to	me and t	inishing time.	
_			
The goal is to so activities that co	dect massing	от потры о	f non-conflicting
activities that co	in be benti	amed by a be	1900 07 9
machine assumin	9 that the	bengon on r	nachine
involved can was	1 00 0 S	inale activity of	- a time
		d'activité à	a cime.
Any two activities	9 040 90:4	to bo acc as	- 01 - 10 -
Hoy two activities	and calini	co de non-co	offiction it
is a way to the or	one activity	y 19 gareater	than on
Starting time of lequal to the f	ioisping ti	me of the off	nen activity
- In order to so	we this p	Hoplew me fize	+ Sort the
activities as be	A their fin	rishing time in	ascending
onder.		~	
			-
Then non-con-	flicting act	ivities are sele	cted
· Now consider	the follow	ing e.g. with	start and
finish time of	to 8 activ	THES	sour and
			_
Activity	Stort	Finish	
$\sim$			
Q <sub>1</sub>	1	3	_
0.2	0	4	-
C) 3	1	2	
Qч	4	6	-
05	2	9	
QC	5	8	
0.1	3	5	
0,8	4	5	

			Midian activ	litles
_	Now we will f	ind the non-co	ont liching	
(1)	Sout the act	11.00 00 00	tinishing tim	ne 10
	Josii The act	WITHES as por	$\sim$	
	ascending onde	$\supset$		
(5)	Select the fings	r activity		
(3)	Select The fingth	tivity Fits sta	ating time is 9	Heater
$\circ$	than an and	to the prievious	1. Colected ac	tivity
	Dal of equal	to the building	geree de al	
4	Repeat Step	3 till all activit	ies one check	Ea
<b>→</b>	Sosted	Stant	Finish	
	Activity			
	Tichting			
		•	0	, and a second
	0.3		2	
	07	Ţ	3	
	02	0	4	
	Q.7	3	5	
	$Q^{g}$	4	5	
	04	4	6	
	Q.c	75	9	
		0	8	
	0,5	2	9	
$\rightarrow$	Select finst	activity	1	
		7		
	Selected Acti	vity - a.	2	
	Stont			
	finish			
->	Select next act	ivity whose sta	at time is	10040
	than on equal	to the finish	time of 11 ch	rearen
	selected activity	-4	the p	LIBUOINAL A
	3000.00	7.		

Sonted Activity	Stort	Finish	
	210011		
$\stackrel{\cdot}{i} \longrightarrow \sigma^3$	7	2	
7 -> 047	Ţ	3	
$Q_2$	0	4	
C=	3	5	
08	4	<u>5</u>	
Q, y	4	6	
$\alpha_{c}$	15	8	
0.5	2	9	
	1 1 38 1	v + 2	
bassionsly selected	activity	= `	
previously selected	2	•	
neact activity = 1	7		
finish time of i =	2		
Stort time of j =			
is stood time of j	> = finis	to soit de	ĺ.
15 376017 11.110 31 7		01) 1(3.76	
No	)		
C mane to	next a	ctivitu	
So, we move to		-	
a La Datinity	Stort	finish	9
-> Souted Activity	010011	, (()( )	
	7	2	
· -> 0.3	0	Ц	
j -> Q2			
	- 0		
finish time of i	- 2		
Stout time of	_ 0	1	
		)	_
. Stoot time of	t = t	inish bime	ot 1.
(, 0)=	. 2		

So we move to next activity

No

Sonted Activity	Stant	Finish	77 4 1
$i \longrightarrow Q_3$ $i \longrightarrow Q_7$	3 T	2 <del>5</del>	
Stoot time of	j = 3 i = 2		
: Stout time of i.e. 3>=		time of i	
: We select the			
-> Now I will be in activity and i	cziemented will move to	to newly selected the new activity	7
Sonted Activity			
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3 4	5	
	= 1 70 90	45	
: Start time of			
: We move to	nesct activ	rity	
Sonted S Activity	10511	Finish	
i-> az	3	$\overline{\mathcal{G}}$	
j-> 04	4	6	
Now stant the	ime of j=	5	

: Stoot time of i > finish time of i

So, we ma	op teen of eve	tivity	
Sonted Activity	Stont	Tinish	
i -> az	3	5	
$j \rightarrow a_{\epsilon}$	5	8	
finish +	time of j = 4 time of j = 5 time of j >. Lect the act	finish time of i	
1 11ia i woll <-	se incoremente	d to newly selection the next activity	ted ty
Sonted Activity	stort 2	Finish	
; -> ac	5	8	
j-> a5	2	3	
Stant finish	time of i	<del>- 2</del> - 8	
:. Start :. Thus	time of it &	finish time of i won't be sele	cted
Thus, the s	elected activ	ities one as for	low
Select Ac	traines Sto	dainst train	
0.3	<i>T</i>	Ω	
Q1	3		
OC	5	8	-