## DAA Assignment 2

\* Aim: Write a program to solve optimal storage problem Using greedy approach.

\* Theory:

Optimal Storage Problem:

- Given n programs stored on a computer tape and length of each program is li or Li where Li <= i <= n, find the order in which programs should be stored on the tape for which mean retrieval time is minimum.
- A magnetic tope provides only sequential access of data. In an audio tape/cassette, the 5th song can't be directly played. The length of the first 4 songs must be traversed to play the 5th song. So to access certain data head of the type should be positioned accordingly.

Example: n = 3  $L[] = {5,3,10}$ 

Order should be  $\{3, 5, 10\}$ MRT = 29/3

	Mean Rel	Nean Retrieval Time				
		2	dasmapsech BAG			
-	Retrieval	time of the dal	ta is the time taken to	retrieve access		
		in its entirety.				
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-	Considering	that all progr	type head points to can be defined called a	ape are retrieved		
	equally	often and the	type head points to	the front of		
	the head	a new term o	can be defined called a	s Mean Retrieval		
	Time (MR	T)		prosal +		
		0	age Mablem			
	MR	T = L E	Σ Lj			
dage to	act loughts	= pon tope o	tojelno konde emorp	old u trag _		
Locals		0 = 3 1 - 3		a moral		
0.00	Example: Suppose there are 3 programs of lengths 2.5,4					
	respectively. So there $3! = 6$ possible orders of					
		storage.		A A		
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	N NAME OF THE OWNER.	al data pas		MRT		
	no		John TRT	IVIN I		
V0 v	word only	123	20	20/3		
		125	20			
	2	132	19	19/3		
			VOL 83 - 10-			
-	3	213	23	29/3		
		701 3	Order Should be   5			
	4	231	25	25/3		
	5	312	21	21/3		
undarani	6	321	FOR EDUCATIONAL USE 24	24/3		
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	Algorithm  Input: No of Files / programs n, their lengths, no of tapes m			
	Output: Storage of files to particular tape so that MRT is minimum			
	Algorithm of storage (n, m)			
•	Sort files in ascending order of length			
	k = 0			
	for i=1 to n do			
	write $(i,k)$ ; $k = (K+1) \mod m$ ;			
0	3			
*	Conclusion: Optimal storage on tapes problem using Gereedy approach has been understood & implemented successfully.			

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