DAA-LAB 6

TOSK = SOUD PRINCIPLES :-

- (1) S: Single Responsibility Principle

 Each class should only have one job
- (2) 0: Open I close Principle (OCP)

 Software entities should be open for extension
 but closed for modification.

 New functionality should be added without changing existing codes.
- (3) L: Liskov Substitution principle

 Objects of a superclass should be replacable

 with objects of a subclass without altering

 correctness of the program
 - (u) 1: Interface segregation principle (ISP)

 client should not be forced to implement
 interfaces they do not use. Make smaller more

 specific interfaces instead of one large interface
 - (5) D: Dependancy Inversion Principle.

 High level modules should not depend on abstractions.

 Both should depend on

reduct max (Ent

(A) LONGEST COMMON SUBSEQUENCE

1) Algorithm

det initialise (seq[[], seq2[])

n=len(seqi)

m=len(seq2)

memo=[]

for i in range (n+1)

3 memo append (2)

det LCS (n,m):

if memo[n][m]!=0:

If n==0 or m==0:

result = 1+ LCS (n+1) mil

ellf segg[n-1] = = segz[n-1] result = 1+LCs(n+1, m-1)

esse

t1= les(n-1,m)

t2 = LCS (n, m)

result = max (t1, t2)

memo [n][m] = result return result

det extract (seg[[], seg2[], memoc[][] i, i = len(seq1), len(seq2) 105- Sequence = [] while i's=o and j l=0: if seq1[i-1] == seq2[j-1]: 1cs-sequence append(seq[[:-])

i==1

j-=1

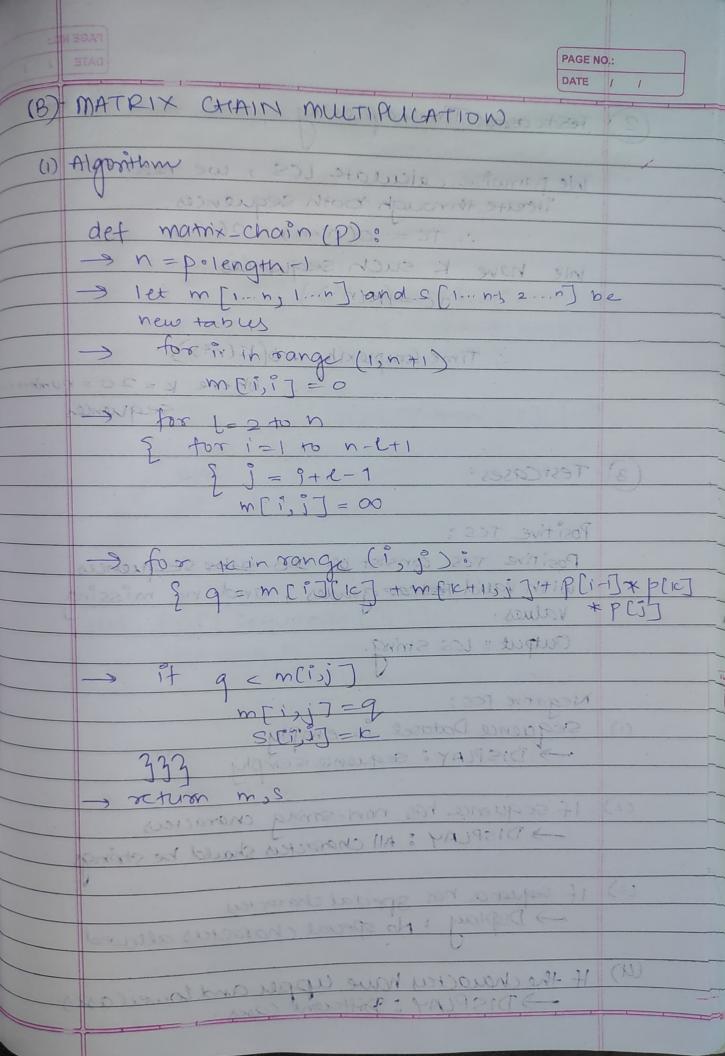
elif memo[i-1][j] >= memo[i][j-1]:

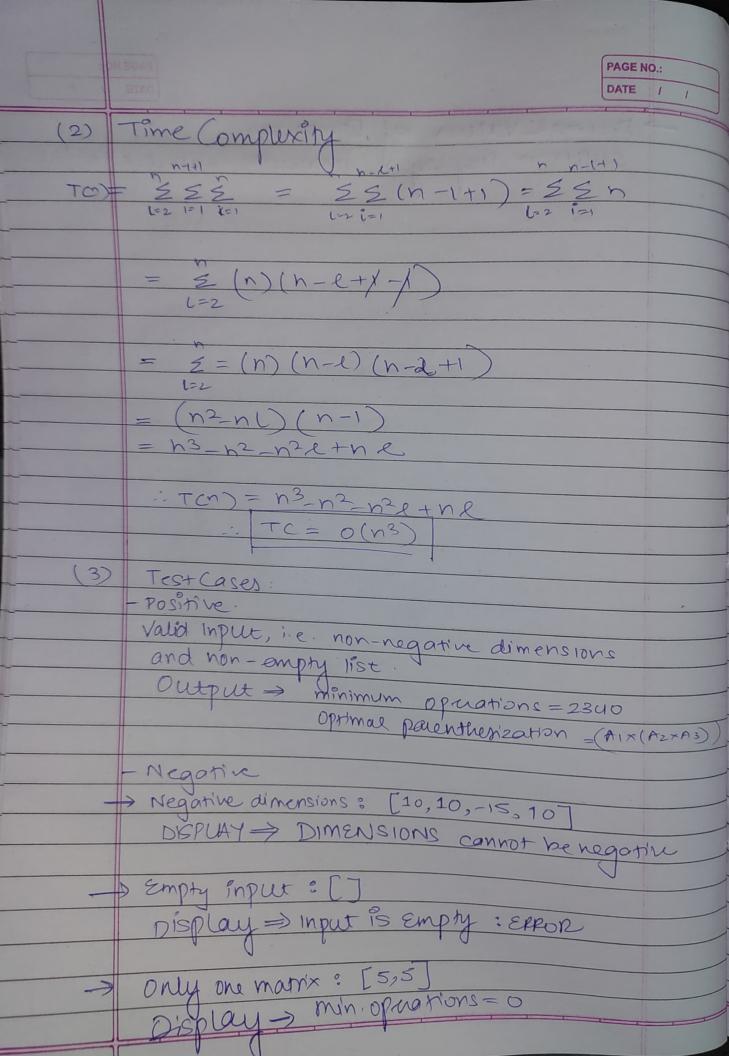
i=0 : (MM) 201 tob else: return les-sequence reverse () det find (sequences []) for seq in range (1, len (sequences)):

res = 1cs (sequences(o), seq) If I result: break neturn res mel-m) 89] =15 F3 - LCS (N, m-1)

wend [w][w] - went

	STAC	PAGE NO.:
(2)	Testeros: Time Complexity	DATE
	Me painuise calculate LCS, we need	0
	mough both sequences	
	$TC = O(n \times n) = O(n^2)$	
	Inle have K such sequences	
	(C = (K(1))	
	-: Time Complexity = O(K(n2))	
	where $k=2$	0 = 2011
	sequ	ences of
3	Test Cases.	
	Positive TCS:	
1019-11	Positive TCS consist of 20 subs sequer	
11	with valid Testas grades, and no mis	sina
	Output: LCS String.	
(1)	Negative TCS:	
(1)	Sequence Dataset is empty DISPLAY: sequence is empty	
	DISPLAY: sequence is empty	
(2)	If sequence has non-string characters —) DISPLAY: All characters should be stri	
	-> DISPLAY: All characters	
(3)	If son	ngs
	-> Displana has special charactery	
) Display: No special characters allow	ed
(u)	If the character house up	
	H the characters have upper and lower commenced and DISPLAY: Different cases.	isis
		1





PAGE NO .: DATE Decimal Values of Dimensions
OUPUT >> Display: Dimensions should be int. (11 (M) (M) (M) = 2 = 1 5 1 3 1 3 5 1 5 7 AND 1