EXPT.	NAME  Page No.:  Page No.:  YOUVA
Q	Write a preogream to pereforem matrix choin multiplication.  Print optimal order of purenthesis with cost of operations,  cost matrix(S) and subproblem matrix(k/m).
_	ALGORITHM: Chain Multiplication:
_	
_	Algoreithm Matrix Chain Multiplication (P,n)
-	11 Computes the cost matrix (K/m) and subpreablem matrix (S) Thout: Size array P
	Input: Size array P, no. of matrices n Output: Cost matrix m, subpreablem matrix S
	BEGIN:
	L. fore 1=1 to n
	2. $m[i,i]=0$
	3. fore l=2 to n
	4. fore i=1 to n-l+1
	5. $j=i+l-1$
	6. m[i,j]=co
	7. fore k=i to j-1
	8.
	9. if q < m[i,j]
1	10 m [i,j]=q, S[i,j]=k
	11. return m and S
	ENO.
1	
	Teacher's Signature:

## OUTPUT:

Entere no. of matrices to multiply: 6

Entere rous fore modrie 1:30 Entere columns fore madrie 1:35

Enter columns fore matrix 2:35 Enter columns fore matreix 2:15

Enter nows for matrix 3: 15 Enter nows for matrix 3: 5

Entere columns fore matrix 4: 5 Entere columns fore matrix 4: 10

Entere recour fore meetrix 5: 10 Entere columns fore meetrix 5: 20

Entere recor fore matrix 6:20 Entere columns fore matrix 6:25

P is [30 35 15 5 10 20 25 ]

Starting time: 0.003358

End time: 0.003404

Time taken: 4.6 e-05 seconds

EXPT.	NAME	M T W T F	S S
NO.		Page No.;	YOUVA
	Optimal Pareenthesis:	Date.	
	Algorithm Preint OptimalParenthe (C:		
	The spring order of	0 . •	
		1 +0	
	Output: Preints optimal set of parenthesis	linder	7
	BEGIN:		
	1. ôf i= j		
	2. preint "Ai"		
	3. else		
	4. preint "("		
	5. preint Optimal Parcenthesis (S, i, S[i, j])		
	6. Print Optimal Pareenthesis (S, S[i,j]+1,j)		
	7. Preint ")"		
	ENID		
	SOURCE CODE:		
	#include Liostream>		
	# include <ctime></ctime>		
	using namespace std;		
	void matrix Chain Mul Cint *P, intn, int ** m, i	n+ * * S)	3
	forc (int i = 0; i < n; i+t)		
	m[i][i]=0;		
			1100
	fore (int l=1; ( <n; (++)="" th="" }<=""><th></th><th></th></n;>		
1	fore lint i=0; ? <n-1; i++)="" th="" {<=""><th></th><th></th></n-1;>		
	int j = i + l;		
	Teacher's Signature:		

```
m matrix is:

[0 15750 7875 9375 11875 15125]

[0 0 2625 4375 7125 10500]

[0 0 0 750 2500 5375]

[0 0 0 0 1000 3500]

[0 0 0 0 0 0 5000]
```

```
S matrix is:

[0 0 0 2 2 2 ]

[0 0 1 2 2 2 ]

[0 0 0 2 2 2 ]

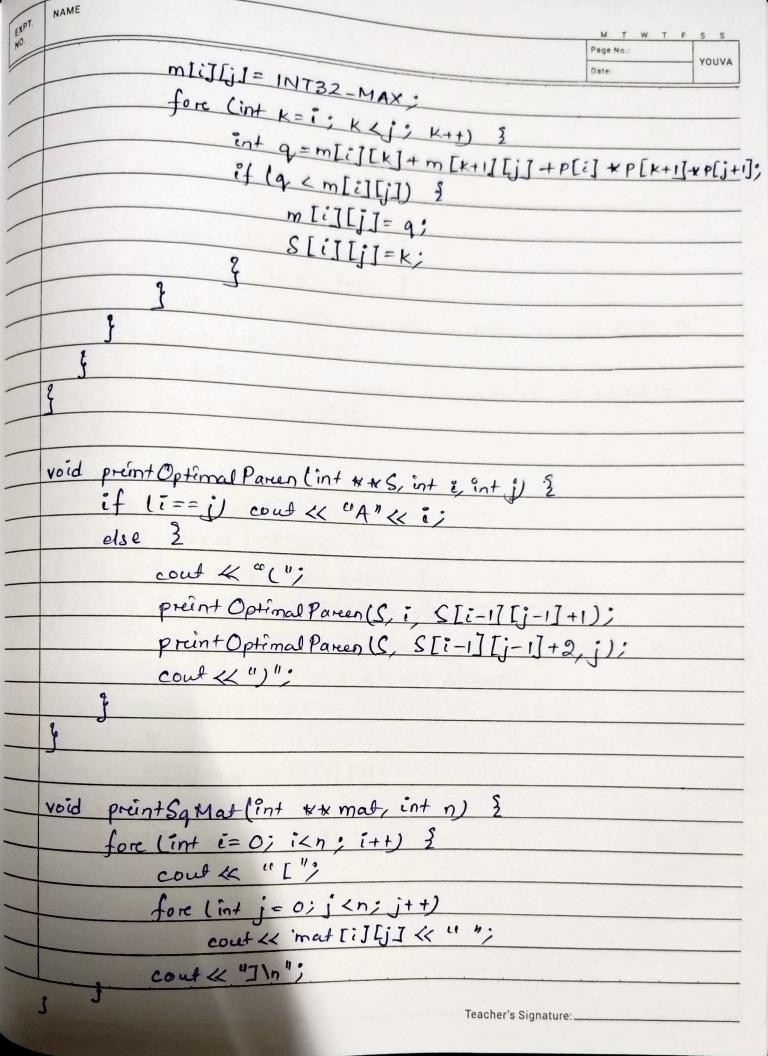
[0 0 0 0 3 4]

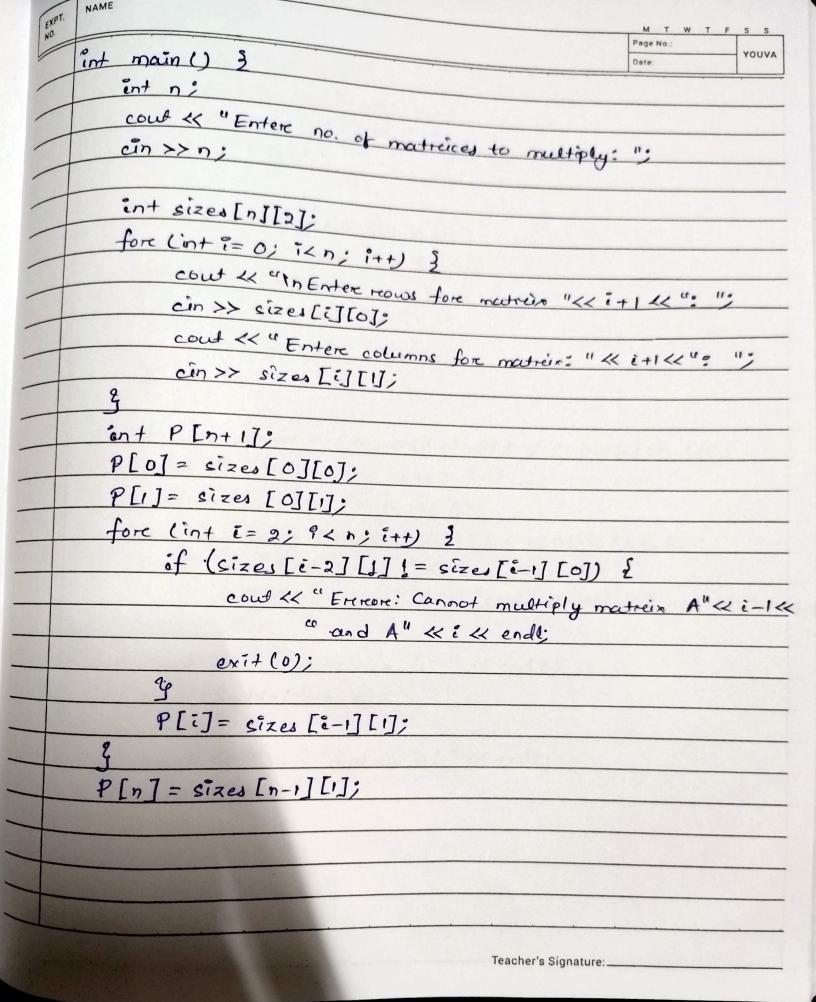
[0 0 0 0 0 0 4]

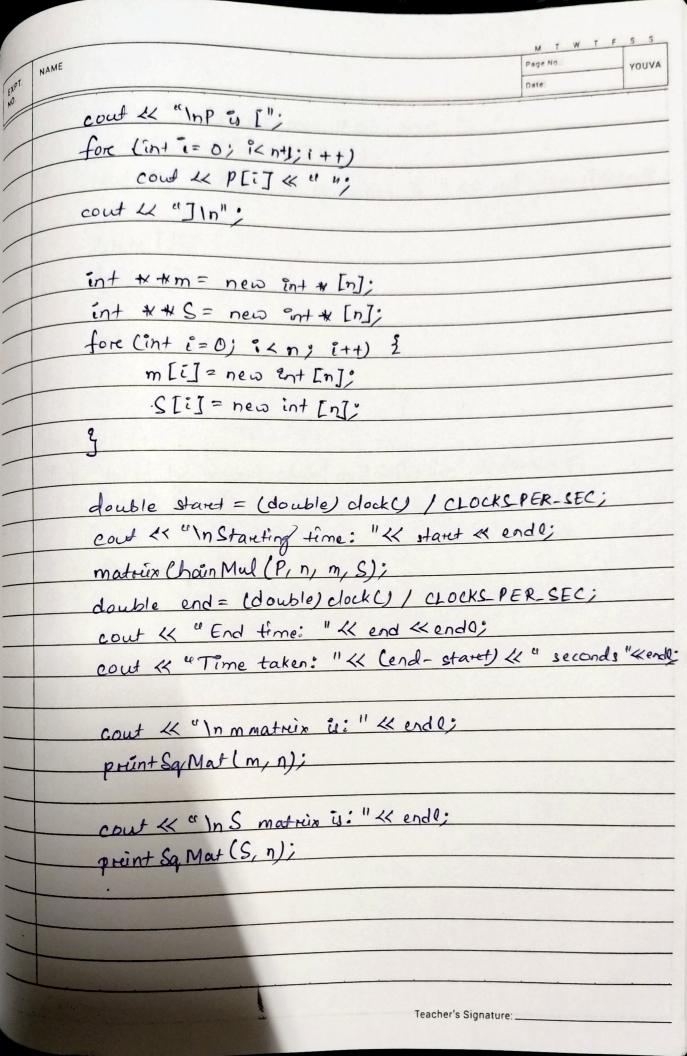
[0 0 0 0 0 0 0 ]
```

Optimal parcenthesis are: ((A1 (A2A3)) ((A4A5)A6))
Cost of operation is 15125

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NAME					F S S
	1 11 65			Page No.:	YOU
	print Optimal Pa	mal parcenthesis	074. ".		
	print Optimal Pa	men (S, F, n);	y,a,		
	cout << "In Cos	st of operation	: " << m	[n][n-1]<	Kendo
			<b>a</b> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
	delete []s;				
	delete []m;				
	return o;				
1					
AN	ALYSIC:				
		ein abein - 112-1	1 1	Sec	
4.	ne taken by matri	an order through	Machon ougon	arman u	
Tim	re Complexity:				
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