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**2022300118**

**SE-Comps B/Batch C**

**14th April 2024**

**LA ISE-1**

**Program No.1** :- Find the 4th row, 2nd column, trace, rank and also display the lower and upper triangular matrix for the following matrix.

A=

**Code :-**

clc

A = [45, 26, 21, 47; 475, 41, 23, 63; 61, 800, 93, 75; 24, 55, 66, 10];

printf("A is :");

disp(A);

printf("4th Row : ");

disp(A(4, :));

printf("2nd Column : ");

disp(A(:, 2));

printf("Trace : ");

disp(trace(A));

printf("Rank : ");

disp(rank(A));

printf("Upper Triangular Matrix : ");

disp(triu(A));

printf("Lower Triangular Matrix : ");

disp(tril(A));

**Output :-**

**A screenshot of a computer

Description automatically generated**

**Program No. 2:-** Solve the given system of equations in terms of x,y,z,w using Gauss Elimination method

4x+y+z+w=2.4

x+5y+2z+w=0.7

2x-3y+3z+2w=3.5

3x+y+z-5w=2.7

**Code**:-

clc

A = [4, 1, 1, 1; 1, 5, 2, 1; 2, -3, 3, 2; 3, 1, -1, 5];

B = [2.4; 0.7; 3.5; 2.7];

C = [A B];

printf("C is : ");

disp(C);

n = 4;

for i=1 : n

if C(i,i)~=0

C(i, :) = C(i, :)/ C(i, i);

disp(C);

for j=1 : n-1

if i+j<n+1

C(i+j, :) = C(i+j, :) - C(i+j, i)\* C(i, :);

else

end

end

end

end

disp(C);

w = C(4, 5);

z = C(3, 5) - w\* C(3, 4);

y = C(2, 5) - w\* C(2, 4) - z\* C(2, 3);

x = C(1, 5) - w\* C(1, 4) - z\* C(1, 3) - y\* C(1, 2);

printf("x = ");

disp(x);

printf("y = ");

disp(y);

printf("z = ");

disp(z);

printf("w = ");

disp(w);

**Output** :-

A screenshot of a computer

Description automatically generated