SVKM’S

DWARKADAS J.SANGHVI COLLEGE OF ENGINEERING

SUBJECT: APPLIED MATHEMATICS-1(SCILAB PROGRAMMING)

SEESION: JULY’2012-DEC’2012

NAME OF EXERCISE:CROUT’S METHOD

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QUESTION: Solve the following system: 7x+3y+z-w=14;2x+3y+2z+w=17;x+4y+4z+6w=20;3x+y-z+5w=12

PROGRAM:

A=input('enter the matrix elements A=')*//enter the coefficient matrix*

b=input('enter the matrix elements b=')*//column matrix of constants*

[L U]=lu(A)*//U is an upper triangular matrix & L is any matrix*

z=L\b

x=U\z

disp(L,'L=')

disp(U,'U=')

disp(z,'z=')

disp(x,'Ans=')

INPUT:

enter the matrix elements A=[7 3 1 -1;2 5 2 1;1 4 4 6;3 1 -1 5]

enter the matrix elements b=[14;17;20;12]

OUTPUT:

L= U=

1. 0. 0. 0. 7. 3. 1. - 1.

0.2857143 1. 0. 0. 0. 4.1428571 1.7142857 1.2857143

0.1428571 0.8620690 1. 0. 0. 0. 2.3793103 5.0344828

0.4285714 - 0.0689655 - 0.5507246 1. 0. 0. 0. 8.2898551

Z= Ans=

14. 1.013986

13. 2.6818182

6.7931034 0.1398601

10.637681 1.2832168