n=input('enter number or equation');

for i=1:1:n

for j=1:1:n

a(i,j)=input('Enter matrix A elements=');

end

b(i)=input('Enter matrix B elements=');

end

for i=1:1:n-1

max = abs(a(i,i));

rn = i;

for k = i+1:1:n

if max<abs(a(k,i));

max = abs(a(k,i));

rn=k;

end

if rn == i;

for j=1:1:n

temp=a(i,j);

a(i,j)=a(rn,j);

a(rn,j)=temp;

end;

temp = b(i);

b(i)=b(rn);

b(rn)=temp;

end

end

end

acc = input('Enter accuracy = ');

err=1

xold=zeros(n,1);

xnew=zeros(n,1);

while err>acc

for i=1:1:n

xold(i)=xnew(i);

end

for i=1:1:n

term=b(i);

for j = 1:1:n

if j~=i

if j<1

term=term-a(i,j)\*xold(j);

else

term=term-a(i,j)\*xnew(j);

end

end

end

xnew(i)=((term)/a(i,j));

e(i)=abs(xold(i)-xnew(i));

fprintf('\tx(%d)=%f',i,xnew(i));

end

err= e(1)  
 for i=2:1:n

if err<e(i)

err=e(i);

end

end

fprintf('\n');

end

enter number or equation3

Enter matrix A elements=1

Enter matrix A elements=2

Enter matrix A elements=20

Enter matrix B elements=20

Enter matrix A elements=-7

Enter matrix A elements=2

Enter matrix A elements=9

Enter matrix B elements=-20

Enter matrix A elements=6

Enter matrix A elements=-23

Enter matrix A elements=-57

Enter matrix B elements=28

Enter accuracy = 0.001

err =

1

x(1)=1.000000 x(2)=-1.444444 x(3)=0.196881

err =

1

x(1)=0.947563 x(2)=-1.682110 x(3)=0.287261

err =

0.0524

x(1)=0.880950 x(2)=-1.824301 x(3)=0.337625

err =

0.0666

x(1)=0.844805 x(2)=-1.902776 x(3)=0.365486

err =

0.0361

x(1)=0.824792 x(2)=-1.946203 x(3)=0.380902

err =

0.0200

x(1)=0.813718 x(2)=-1.970232 x(3)=0.389433

err =

0.0111

x(1)=0.807591 x(2)=-1.983529 x(3)=0.394153

err =

0.0061

x(1)=0.804200 x(2)=-1.990886 x(3)=0.396765

err =

0.0034

x(1)=0.802324 x(2)=-1.994957 x(3)=0.398210

err =

0.0019

x(1)=0.801286 x(2)=-1.997209 x(3)=0.399009  
  
err =

0.0010

x(1)=0.800712 x(2)=-1.998456 x(3)=0.399452

err =

5.7441e-04

x(1)=0.800394 x(2)=-1.999146 x(3)=0.399697

err =

3.1784e-04