n = input('Enter the no. of the Equation= ');

for i=1:1:n

for j=1:1:n

a(i,j)= input('Enter the value of a(i,j)= ');

end

b(i)= input('Enter the value of b(i)= ');

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

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

Acc = input('Enter the value of 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>i

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

else

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

end  
  
end

end

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

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

end

err = e(1);

for i=2:1:n

if err<e(i)

err=e(i);

end

end

end

for i=1:1:n

fprintf('xnew(i)=%f',xnew(i))

end

%OUTPUT

Enter the no. of the Equation= 3

Enter the value of a(i,j)= 1

Enter the value of a(i,j)= 20

Enter the value of a(i,j)= 9

Enter the value of b(i)= -23

Enter the value of a(i,j)= 2

Enter the value of a(i,j)= -7

Enter the value of a(i,j)= -20

Enter the value of b(i)= -57

Enter the value of a(i,j)= 20

Enter the value of a(i,j)= 2

Enter the value of a(i,j)= 6

Enter the value of b(i)= 28

Enter the value of Accuracy= 0.001

xnew(i)=0.514832xnew(i)=-2.945151xnew(i)=3.932286>>