```matlab
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)
```

```matlab
    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
```