

```

function xnew=Jacobi(A,b,maxerr,maxiter,guess)
    if(nargin <2)
        error('at least two arguments required')
        return
    end
    if(nargin < 3)
        maxerr=0.00001;
    end
    if(nargin < 4)
        maxiter=100;
    end
    [n,m] = size(A);
    if(n~=m)
        error('A is not a square matrix')
        return;
    end
    [k,k1]=size(b)
    if(k~=n)
        error('the dimensions of A and b do not match')
        return;
    end
    if(nargin < 5)
        for i=1:n
            guess(i)=0.0
        end;
    end
    for i=1:n
        sum=0
        for j=1:n
            if (j~=i)
                sum = sum + A(i,j)
            end
        end
        if (A(i,j) < sum )
            error('convergence criteria is not satisfied');
            return
        end
    end
    xnew=zeros(n);
    D=zeros(n,n)
    for i=1:n
        D(i,i)=A(i,i)
    end
    R=zeros(n,n)
    R=A-D
    D1 = inv(D)
    C=D1*b
    E=D1*R
    xoldt = guess'
    for i=1:maxiter
        F=E*xoldt
        xnewt = C-F
        xnew=xnewt'
        xold=xoldt'
        for k=1:n
            relerr=zeros(n);
            relerr(k) = abs((xnew(1,k)-xold(1,k))/xnew(1,k));
        end
        if (max(relerr) < maxerr)
            return;
        end
        xoldt = xnewt
        iteration=i
    end
end

```

Error using ==> Jacobi at 3