
```
function X = jacobiassignment(A,b,x0,tol)
A=[10 -2 1;-2 10 -2;-2 -5 10];
b=[9 12 18]';
x0=[0 0 0]';
max1=100;
tol=0.0000001;
n=length(b);
for k=1:max1
    for i=1:n
        X(i) = (b(i)-A(i,[1:i-1,i+1:n])*x0([1:i-1,i+1:n]))/A(i,i)
    end
    err=abs(norm(X'-x0));
    relerr=err/(norm(X));
    x0=X'
    if (err<tol)|(relerr<tol)
        break
    end
end
X=X'
```

X =

0.9000

X =

0.9000 1.2000

X =

0.9000 1.2000 1.8000

x0 =

0.9000

1.2000

1.8000

X =

0.9600 1.2000 1.8000

X =

0.9600 1.7400 1.8000

$X =$

0.9600 1.7400 2.5800

$x0 =$

0.9600
1.7400
2.5800

$X =$

0.9900 1.7400 2.5800

$X =$

0.9900 1.9080 2.5800

$X =$

0.9900 1.9080 2.8620

$x0 =$

0.9900
1.9080
2.8620

$X =$

0.9954 1.9080 2.8620

$X =$

0.9954 1.9704 2.8620

$X =$

0.9954 1.9704 2.9520

$x0 =$

0.9954
1.9704

2.9520

X =

0.9989 1.9704 2.9520

X =

0.9989 1.9895 2.9520

X =

0.9989 1.9895 2.9843

x0 =

0.9989
1.9895
2.9843

X =

0.9995 1.9895 2.9843

X =

0.9995 1.9966 2.9843

X =

0.9995 1.9966 2.9945

x0 =

0.9995
1.9966
2.9945

X =

0.9999 1.9966 2.9945

X =

| | | |
|--------|--------|--------|
| 0.9999 | 1.9988 | 2.9945 |
|--------|--------|--------|

X =

| | | |
|--------|--------|--------|
| 0.9999 | 1.9988 | 2.9982 |
|--------|--------|--------|

x0 =

| |
|--------|
| 0.9999 |
| 1.9988 |
| 2.9982 |

X =

| | | |
|--------|--------|--------|
| 0.9999 | 1.9988 | 2.9982 |
|--------|--------|--------|

X =

| | | |
|--------|--------|--------|
| 0.9999 | 1.9996 | 2.9982 |
|--------|--------|--------|

X =

| | | |
|--------|--------|--------|
| 0.9999 | 1.9996 | 2.9994 |
|--------|--------|--------|

x0 =

| |
|--------|
| 0.9999 |
| 1.9996 |
| 2.9994 |

X =

| | | |
|--------|--------|--------|
| 1.0000 | 1.9996 | 2.9994 |
|--------|--------|--------|

X =

| | | |
|--------|--------|--------|
| 1.0000 | 1.9999 | 2.9994 |
|--------|--------|--------|

X =

| | | |
|--------|--------|--------|
| 1.0000 | 1.9999 | 2.9998 |
|--------|--------|--------|

x0 =

1.0000
1.9999
2.9998

X =

1.0000 1.9999 2.9998

X =

1.0000 2.0000 2.9998

X =

1.0000 2.0000 2.9999

x0 =

1.0000
2.0000
2.9999

X =

1.0000 2.0000 2.9999

X =

1.0000 2.0000 2.9999

X =

1.0000 2.0000 3.0000

x0 =

1.0000
2.0000
3.0000

X =

1.0000 2.0000 3.0000

$X =$

1.0000 2.0000 3.0000

$X =$

1.0000 2.0000 3.0000

$x0 =$

1.0000
2.0000
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$X =$

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$X =$

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$X =$

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$x0 =$

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$X =$

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$X =$

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$X =$

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$x_0 =$

1.0000
2.0000
3.0000

$X =$

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$X =$

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$X =$

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$x_0 =$

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2.0000
3.0000

$X =$

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$X =$

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$X =$

1.0000 2.0000 3.0000

$x_0 =$

1.0000
2.0000
3.0000

$X =$

1.0000

2.0000
3.0000

ans =

1.0000
2.0000
3.0000

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