
```
function [b] = ltriangle(L,b,n)
for j=1:n-1
    b(j)=b(j)/L(j,j);
    b(j+1:n)=b(j+1:n)-b(j)*L(j+1:n,j);
end
b(n)=b(n)/L(n,n);
end
```

```
function [y] = utriangle(U,y,n)
for j=n:-1:2
    y(j)=y(j)/U(j,j);
    y(1:j-1)=y(1:j-1)-y(j)*U(1:j-1,j);
end
y(1)=y(1)/U(1,1);
end
```

```
function [A] = square(A,n)
v=zeros(n,1);
for j=1:n
    for i=1:j-1
        v(i)=A(j,i)*A(i,i);
    end
    A(j,j)=A(j,j)-A(j,1:j-1)*v(1:j-1);
    A(j+1:n,j)=(A(j+1:n,j)-A(j+1:n,1:j-1)*v(1:j-1))/A(j,j);
end
end
```

```
n=100;
A=zeros(n);
D=zeros(n);
A=diag(10*ones(1,n))+diag(ones(1,n-1),-1)+diag(ones(1,n-1),1);
b=ones(n,1);
A=square(A,n);
L=tril(A,-1)+diag(ones(1,n));
D=diag(diag(A));
U=D*L';
y=ltriangle(L,b,n);
x=utriangle(U,y,n)
```

```
x =

    0.0918
    0.0825
```

[illegible]

[illegible]

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