
```
function [L,U] = LU(A)
N = length(A);
for i = 1:1:N
    for j = 1:1:N
        L(i,j) = 0;
        if (i == j)
            L(i,j) = 1;
        end
    end
end

for k = 1:1:N-1
    if (A(k,k)==0)
        disp("Pivot is zero")
    end

    for i = k+1:1:N
        L(i,k) = (A(i,k)/A(k,k));
        A(i,:) = A(i,:) - (A(i,k)/A(k,k))*A(k,:);
    end
end

U = A;
end
```

end

$L =$

1	0	0
2	1	0
1	-2	1

$U =$

1	1	1
0	1	-1
0	0	-4

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