```
[L, U] = LUDecomp([1 1 1; 2 1 3; 3 4 -2])
L*U
function [L, U] = LUDecomp(A)

[m,n] = size(A);
L = eye(n);
for i = 1:m-1
    for j = i+1:m
        alpha = A(j,i)/A(i,i);
        L(j,i) = alpha;
        for k = 1:m
            A(j,k) = A(j,k) - alpha.*A(i,k);
        end
    end
end
U = A;
end
```

```
L =

     1     0     0
     2     1     0
     3    -1     1


U =

     1     1     1
     0    -1     1
     0     0    -4


ans =

     1     1     1
     2     1     3
     3     4    -2
```

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