```
function U = GS_orthogonalization(A)
% ECE 532 HW3 U2
%   U is the matrix of the Gram-Schmidt orthogonalized vectors
 spanning A's
%   vectors

[m, n] = size(A);

R = zeros(n);
U = zeros(m, n);

R(1, 1) = norm(A(:, 1));
U(:, 1) = A(:, 1)/R(1, 1);

for k = 2:n
    R(1:k-1, k) = U(:, 1:k-1)' * A(:, k);
    U(:, k) = A(:, k) - U(:, 1:k-1) * R(1:k-1, k);
    R(k, k) = norm(U(:, k));

    if R(k, k) == 0
        break;
    end

    U(:, k) = U(:, k) / R(k, k);
end
end
```

```
ans =

    1.0000         0
         0    0.6000
         0    0.8000
```

A = [3,1;0,3;0,4]
from question 1

Published with MATLAB® R2016b