Lab#3

```
function [Q, R] = householder_qr(A)
    [m, n] = size(A);
    R = A;
    Q = eye(m);

    for k = 1:n
        u = R(k:m, k);
        u(1) = u(1) + sign(u(1)) * norm(u);
        u = u / norm(u);

        R(k:m, k:n) = R(k:m, k:n) - 2 * u * (u' * R(k:m, k:n));
        Q(k:m, :) = Q(k:m, :) - 2 * u * (u' * Q(k:m, :));
    end
end


A = [1, 2, 3; 4, 5, 6; 7, 8, 9];
[Q, R] = householder_qr(A);


 disp(Q);
disp(R);
disp(A);
```