

```
function [Q, R] = qr_cgs(A)

[m, n] = size(A);
Q = zeros([m n]);
R = zeros([n n]);

for j= 1 : n
    vj = A(:,j);
    k = 1;

    while (k < j)
        R(k,j) = Q(:,k)' * A(:,j);
        vj = vj - R(k,j) * Q(:,k);
        k = k + 1;
    end

    R(k,j) = norm(vj);
    Q(:,j) = vj / R(j,j);
end
```