```
Q = orth(round(rand(11,11)*10));
A =Q'*diag(-5:5)*Q;
eig(1,1:11) = diag(A);
%first turn the matrix into a upper hessenberg matrix
[U,H] = HouseHess(A);
A = H;
eig(2,1:11) = diag(A);
i=2;
%get the info of the n m of matrix A
 for k = 1:10
    [n,m] = size(A);
    shift = A(n,m);
    %introduce shifts
    while abs(A(n,m-1)) >= 10^-4
        A = A - shift*diag(ones(1,n));
        [Q,R] = MGS(A);
        A = R*Q + shift*diag(ones(1,n));
        shift = A(n,m);
        i = i + 1;
        eig(i,1:n) = diag(A);
        if n < 11
            eig(i,(n+1):11) = eig((i-1),(n+1):11);
        end
    end
    %split the matrix
    A = A((1:n-1),(1:m-1));
 end
 plot(eig)
```
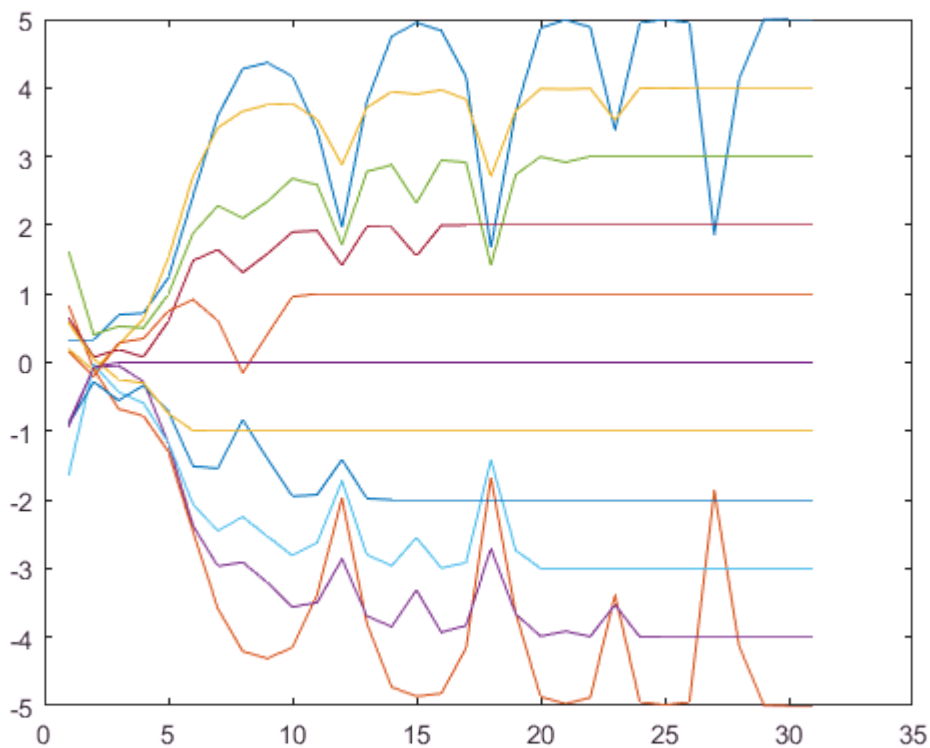


```
%the x axis represents the number of iteration; and the y axis represent the value of diagona
```