```matlab
function [lam vek] = PowerMethod(A)
%This program finds the eigenvalue of
%maximum magnitude and its eigenvector
[n m]=size(A);
if n~=m
    error('Matrix must be square')
end

tol=10^-14;
fark=inf;
z1=ones(n,1);
%counter=0;
while fark>tol
    w=A*z1;
    [mxm index]=max(abs(w));
    z2=w/w(index);
    fark=max(abs(z1-z2));
    z1=z2;
%counter=counter+1;
end
%counter
lam=w(index);
vek=z2/norm(z2);
end
```