

```

% *****
% ***** bisection method *****
% **** to find a root of the function f(x) ****
% *****

clc
clear
close all
f=@(x) x.^3+4*x.^2-10 ;
% f=@(x) (x+1)^2*exp(x^2-2)-1;
a=1; % Start point
b=2; % End point
c=(a+b)/2; % Initial value of root
e=0.00001; % Absolut Error in the value of f(c)

k=1;
fprintf('      k      a      b      f(c)      \n');
fprintf('      ---      -----      -----      -----      \n');

while abs(f(c)) > e
    c=(a+b)/2;
    if f(c)*f(a)<0
        b=c;
    else
        a=c;
    end

    fprintf('%6.f  %10.8f  %10.8f  %10.8f \n', k,a,b,f(c));
    k=k+1;
end

fprintf(' The approximated root is c= %10.10f \n', c);

```