```
clear
clc
f = @(x) atan(x);
x0=(0.5); %input x0 and x1 here
x1 = (1);
tolerance = 10^(-10);
%if f(x0)*f(x1)>0
 %   disp('Not a valid interval');
  %  return
%else
%i = 0
    error=abs(x1-x0);
    for i=1:20
        x2 = (x0*f(x1)-x1*f(x0))/(f(x1)-f(x0));
        x0=x1;
        x1=x2;
        error = abs(x1-x0);
        val = x2;
     %   i=i+1;
        fprintf('x is: %2.10f', val);
           if error < tolerance
            break
            end
          %fprintf('error is: %4.3f', error);
    end
```

```
x is: -0.2205078634x is: 0.0437417835x is: -0.0005590789x is: 0.0000003518x is: -0.0000000000x is: 0.0000000000
```

```
    fprintf('The solution is: %4.3f', val);
```

```
The solution is: 0.000
```

```
%end
```