AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT
OF
ELECTRICAL AND ELECTRONIC ENGINEERING

LAB REPORT

COURSE NO   : EEE 2226
COURSE NAME   : Numerical Technique Laboratory
EXPERIMENT NO   : 05
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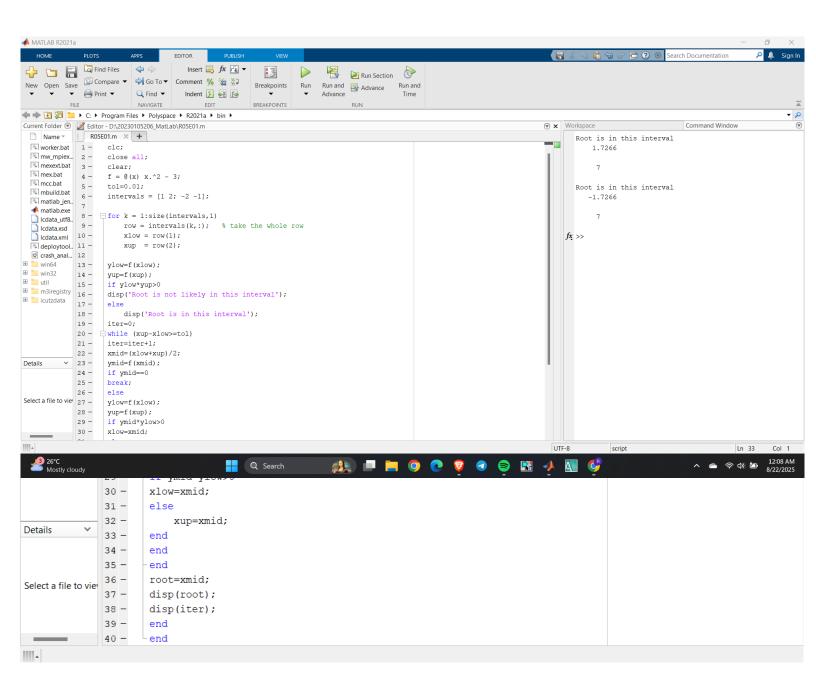
Submitted by :
        Name   : Rafayet Ahammad
        ID   : 20230105206
        Year   : 2nd
        Semester : 2nd
        Section   : D(2)

1.Positive and negative roots of non-linear equations:


```matlab
1    clc;
2    close all;
3    clear;
4    f = @(x) x.^2 - 3;
5    tol=0.01;
6    intervals = [1 2; -2 -1];
7
8    for k = 1:size(intervals,1)
9        row = intervals(k,:);   % take the whole row
10       xlow = row(1);
11       xup  = row(2);
12
13   ylow=f(xlow);
14   yup=f(xup);
15   if ylow*yup>0
16   disp('Root is not likely in this interval');
17   else
18       disp('Root is in this interval');
19   iter=0;
20   while (xup-xlow>=tol)
21   iter=iter+1;
22   xmid=(xlow+xup)/2;
23   ymid=f(xmid);
24   if ymid==0
25   break;
26   else
27   ylow=f(xlow);
28   yup=f(xup);
29   if ymid*ylow>0
30   xlow=xmid;
31   else
32       xup=xmid;
33   end
34   end
35   end
36   root=xmid;
37   disp(root);
38   disp(iter);
39   end
40   end
```

Command Window output:
```
Root is in this interval
    1.7266

    7

Root is in this interval
   -1.7266

    7

fx >>
```

2. Equation with imaginary roots can't be solved using bisection method or false position method.