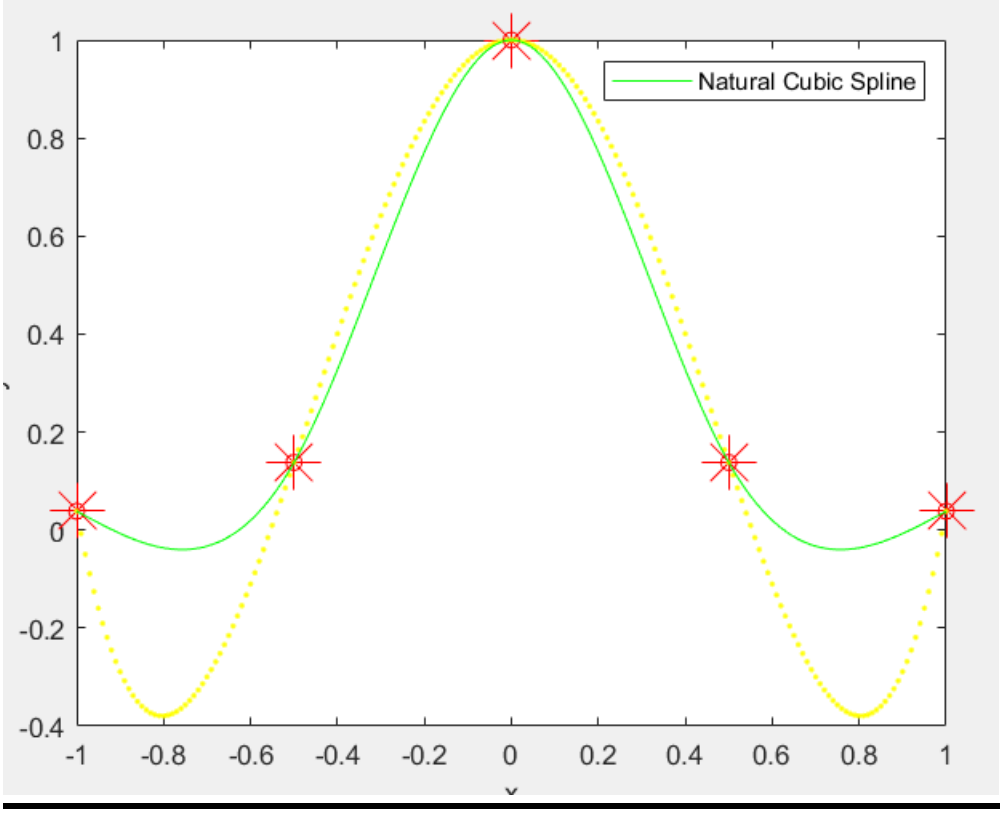
Programming Assignment 3

Lagrange Interpolation and Natural Cubic Spline

```
Interpolated values of y* at given x*
Natural Cubic Spline:
-0.8000 -0.0363
-0.2000 0.7716
0.2000 0.7716
0.8000 -0.0363
```

```
Lagrange Polynomial Method
(X ,Y) is
-0.800000 -0.379336
-0.200000 0.834211
0.200000 0.834211
0.800000 -0.379336
```



Least Square Approximation

For n=1

```
Coefficient are :
-1.859589
15.363438
R-sq is : 0.866552
```

For n=2

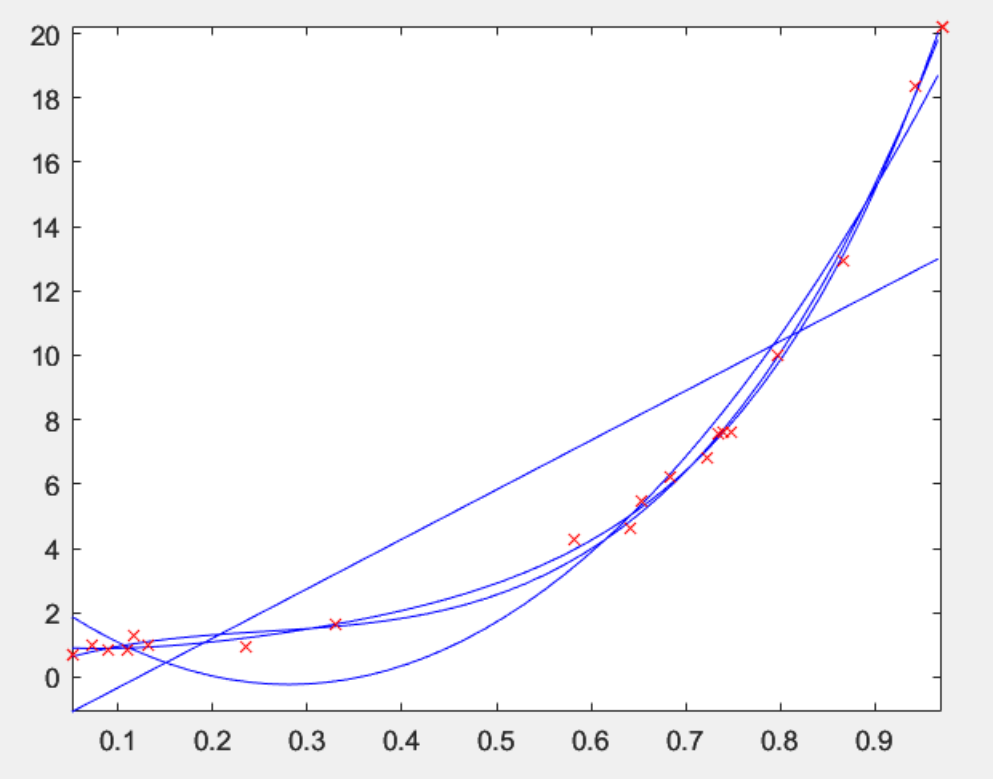
```
Coefficient are :
2.917007
-22.465799
40.109322
R-sq is : 0.988643
```

For n=3

```
Coefficient are :
0.154966
11.192300
-36.585222
47.596476
R-sq is : 0.998729
```

For n=4

```
Coefficient are :
1.027082
-3.744007
28.959217
-52.383390
49.055647
R-sq is : 0.999186
```


20
18
16
14
12
10
8
6
4
2
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9