```
Python 3.6.3 |Anaconda custom (64-bit)| (default, Nov  8 2017, 15:10:56) [MSC v.1900 64
bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 6.2.1 -- An enhanced Interactive Python.

Restarting kernel...
```

---

```
In [1]: runfile('C:/Users/tzave/ComputationalPhysics/Assignment3/ex1.py', wdir='C:/Users/
tzave/ComputationalPhysics/Assignment3')
Function Value f(1.25)= 11.1824939607
Lagrange polyn p(1.25)= 11.1824517251

In [2]: runfile('C:/Users/tzave/ComputationalPhysics/Assignment3/ex2.py', wdir='C:/Users/
tzave/ComputationalPhysics/Assignment3')
Theoretical Error: 0.0400033790844
Graphical Error: 0.0398976123497

In [3]: runfile('C:/Users/tzave/ComputationalPhysics/Assignment3/ex3.py', wdir='C:/Users/
tzave/ComputationalPhysics/Assignment3')
Reloaded modules: interpolation
Order 4 coefficent is 2.0

In [4]: runfile('C:/Users/tzave/ComputationalPhysics/Assignment3/ex4.py', wdir='C:/Users/
tzave/ComputationalPhysics/Assignment3')
Reloaded modules: interpolation
Monomial:    2
3 x - 2 x + 1
Legendre:    2
3 x - 2 x + 1

Monomial:             2
-2.929e-14 x - 2.432 x + 1.216
Legendre:        2
-2.28 x + 0.7599

Monomial:         2
0.3087 x - 0.9305 x + 0.9945
Legendre:         2
0.5367 x - 1.104 x + 0.9963

In [5]: runfile('C:/Users/tzave/ComputationalPhysics/Assignment3/ex5.py', wdir='C:/Users/
tzave/ComputationalPhysics/Assignment3')
Reloaded modules: interpolation
Actual df(0.5)= -0.606530659713
Numeric df(0.5) -0.612868460661
Actual d2f(0.5)= 0.606530659713
Numeric d2f(0.5) 0.609696262194
Max error is 0.00811250815699

In [6]:
```