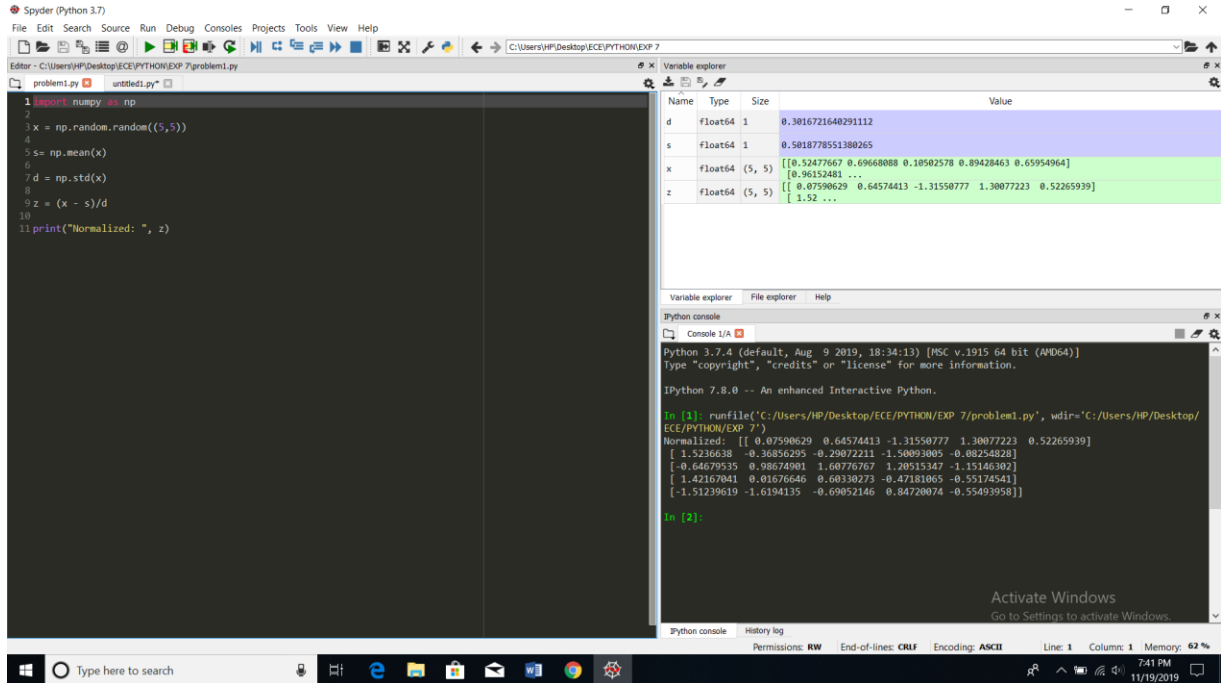


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Problem 1.)



The screenshot shows the Spyder Python IDE interface. The editor window displays the following code:

```
1 import numpy as np
2
3 x = np.random.random((5,5))
4
5 s = np.mean(x)
6
7 d = np.std(x)
8
9 z = (x - s)/d
10
11 print("Normalized: ", z)
```

The Variable explorer on the right shows the following variables:

Name	Type	Size	Value
d	float64	1	0.3016721640291112
s	float64	1	0.5018778551380265
x	float64	(5, 5)	[[0.52477667 0.69668088 0.10502578 0.89428463 0.65954964] [0.96152481 ... [0.07590629 0.64574413 -1.31550777 1.30077223 0.52265939] [1.52 ...
z	float64	(5, 5)	[[0.07590629 0.64574413 -1.31550777 1.30077223 0.52265939] [1.5236638 -0.36856295 -0.29072211 -1.50093005 -0.88254828] [-0.64679535 0.98674901 1.60776767 1.20515347 -1.15146302] [1.42167041 0.01676646 0.60330273 -0.47181065 -0.55174541] [-1.51239619 -1.6194135 -0.69052146 0.84728074 -0.55493958]]

The IPython console shows the output of the code:

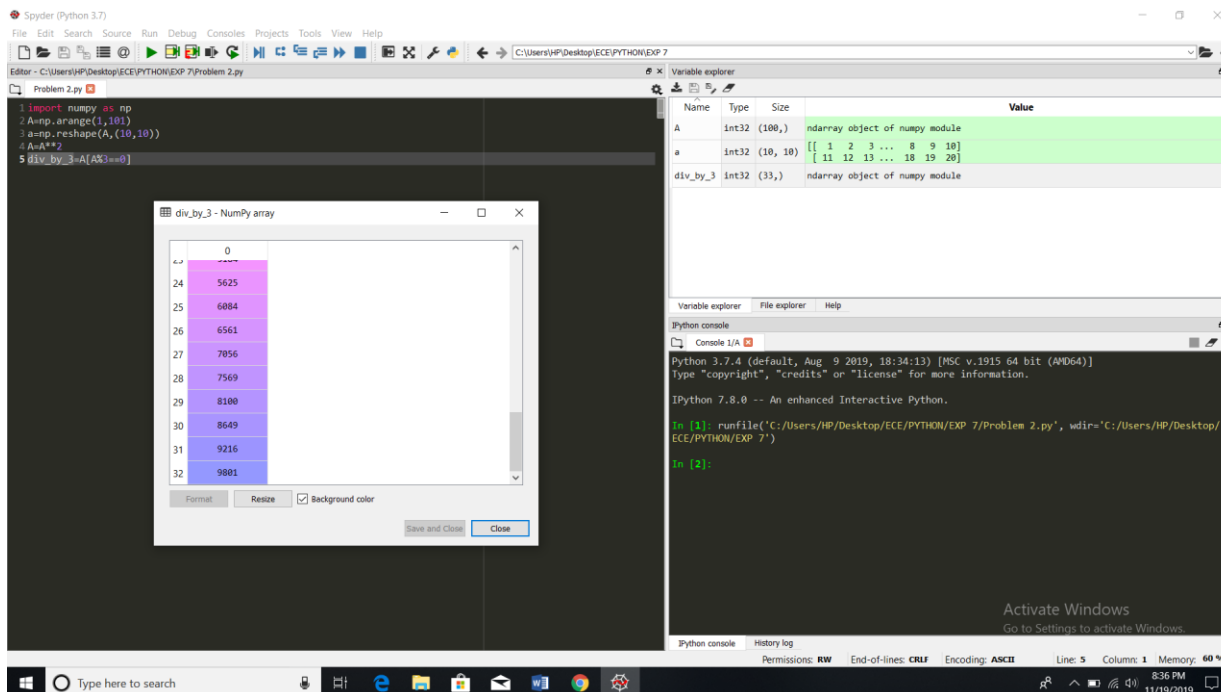
```
Python 3.7.4 (default, Aug 9 2019, 18:34:13) [MSC v.1915 64 bit (AMD64)]
Type "copyright", "credits" or "license()" for more information.

IPython 7.8.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/HP/Desktop/ECE/PYTHON/EXP 7/problem1.py', wdir='C:/Users/HP/Desktop/ECE/PYTHON/EXP 7')
Normalized: [[ 0.07590629  0.64574413 -1.31550777  1.30077223  0.52265939]
 [ 1.5236638  -0.36856295 -0.29072211 -1.50093005 -0.88254828]
 [-0.64679535  0.98674901  1.60776767  1.20515347 -1.15146302]
 [ 1.42167041  0.01676646  0.60330273 -0.47181065 -0.55174541]
 [-1.51239619 -1.6194135  -0.69052146  0.84728074 -0.55493958]]

In [2]:
```

Problem 2.)



The screenshot shows the Spyder Python IDE interface. The editor window displays the following code:

```
1 import numpy as np
2 A = np.arange(1,101)
3 a = np.reshape(A,(10,10))
4 A = A**2
5 div_by_3 = A[A%3==0]
```

The Variable explorer on the right shows the following variables:

Name	Type	Size	Value
A	int32	(100,)	ndarray object of numpy module
a	int32	(10, 10)	[[1 2 3 ... 8 9 10] [11 12 13 ... 18 19 20] [21 22 23 ... 28 29 30] [31 32 33 ... 38 39 40] [41 42 43 ... 48 49 50] [51 52 53 ... 58 59 60] [61 62 63 ... 68 69 70] [71 72 73 ... 78 79 80] [81 82 83 ... 88 89 90] [91 92 93 ... 98 99 100]]
div_by_3	int32	(33,)	ndarray object of numpy module

The IPython console shows the output of the code:

```
Python 3.7.4 (default, Aug 9 2019, 18:34:13) [MSC v.1915 64 bit (AMD64)]
Type "copyright", "credits" or "license()" for more information.

IPython 7.8.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/HP/Desktop/ECE/PYTHON/EXP 7/Problem 2.py', wdir='C:/Users/HP/Desktop/ECE/PYTHON/EXP 7')

In [2]:
```

A NumPy array viewer window is open, showing the array 'div_by_3' with the following values:

Index	Value
0	1
24	5625
25	6884
26	6561
27	7956
28	7569
29	8100
30	8649
31	9216
32	9801