

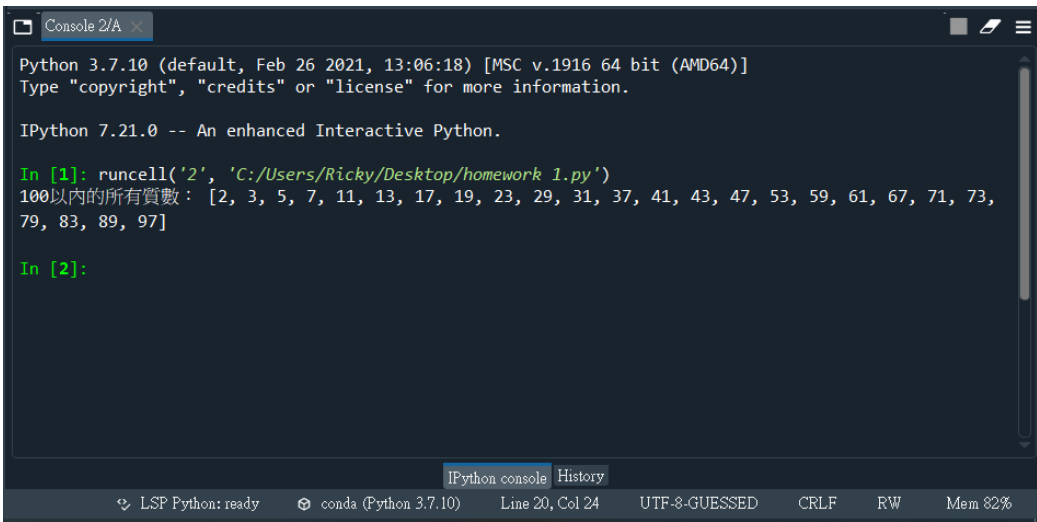
10920ESS 427000 機器學習導論

Introduction to Machine Learning

Homework 1

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請將程式碼及執行結果截圖

|   |  |
|---|--|
| import 的函式庫   |  |
| import numpy as np<br>import matplotlib.pyplot as plt<br>import scipy.io as sio |  |
| (1)   |  |
| 執行結果  |   |
| (2)   |  |
| 執行結果  |  |
| (3)   |  |

執行結果

```
Console 3/A x
Python 3.7.10 (default, Feb 26 2021, 13:06:18) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.21.0 -- An enhanced Interactive Python.

In [1]: runcell('3', 'C:/Users/Ricky/Desktop/homework 1.py')
[[1. 2. 3.]
 [1. 2. 4.]
 [1. 2. 5.]
 ...
 [9. 8. 5.]
 [9. 8. 6.]
 [9. 8. 7.]]
a>b>c的機率為: 0.16666666666666666

In [2]:
```

IPython console History

LSP Python: ready conda (Python 3.7.10) Line 39, Col 1 UTF-8 CRLF RW Mem 82%

(4)

執行結果

```
Console 4/A x
Python 3.7.10 (default, Feb 26 2021, 13:06:18) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.21.0 -- An enhanced Interactive Python.

In [1]: runcell('4', 'C:/Users/Ricky/Desktop/homework 1.py')
當正方形數量為15時，黃金矩形的面積為: 602070

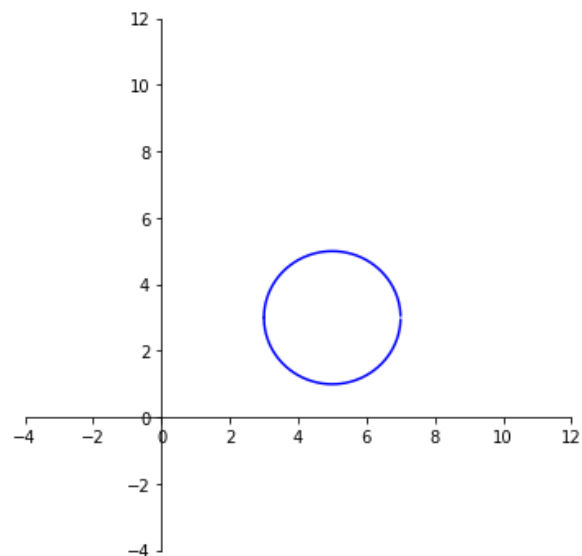
In [2]:
```

IPython console History

LSP Python: ready conda (Python 3.7.10) Line 48, Col 1 UTF-8 CRLF RW Mem 82%

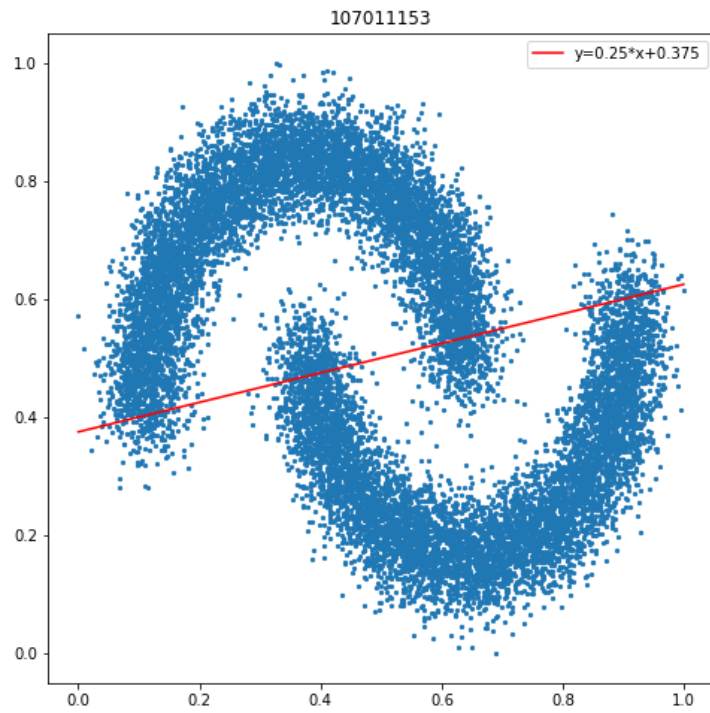
(5)

執行結果



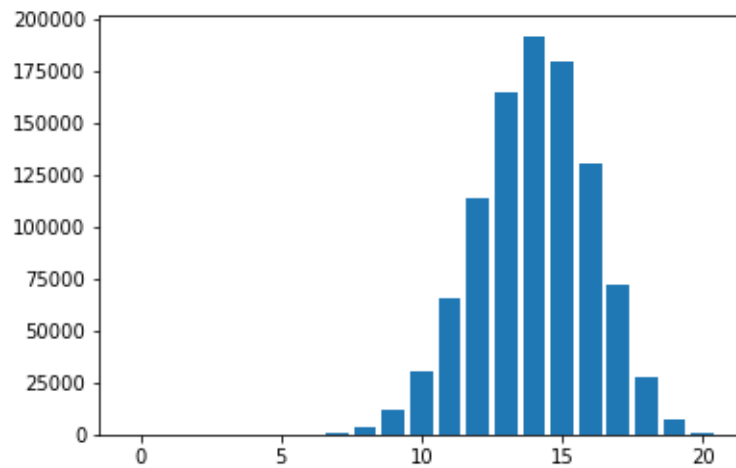
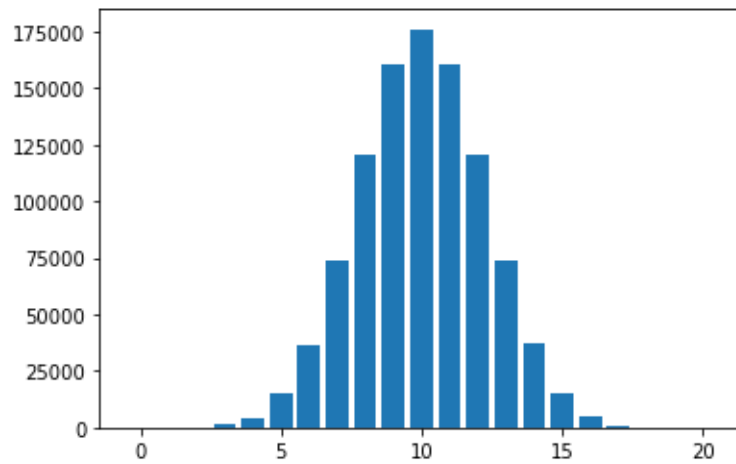
(6)

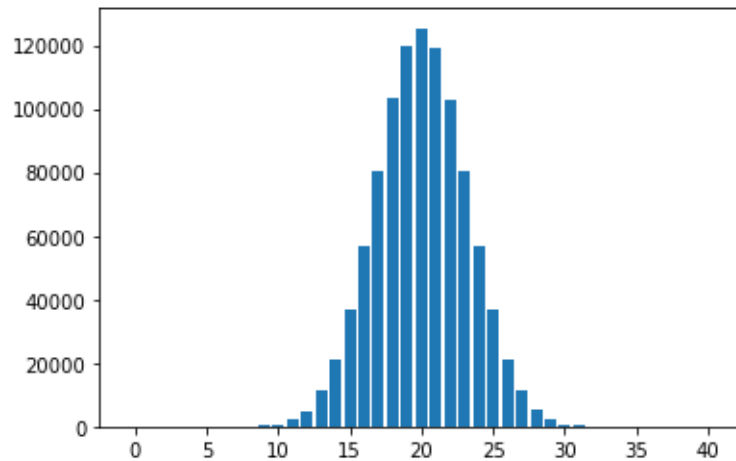
執行結果



(7)

執行結果





- $p$  上升會讓分布往右移； $p$  下降則會讓分布往左移。
- $n$  上升會讓圖形變矮變寬； $n$  下降則會讓圖形變高變窄。
- $k$  上升會趨於 binomial 的理想分布； $k$  下降則會類似亂數分布。

```

Python 3.7.10 (default, Feb 26 2021, 13:06:18) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license()" for more information.

IPython 7.21.0 -- An enhanced Interactive Python.

In [1]: runcell('7', 'C:/Users/Ricky/Desktop/homework 1.py')
二項分布( n = 20 , p = 0.5 )的標準差為: 2.2348
落在平均值正負一個標準差內的比例為: 73.7457 %
二項分布( n = 20 , p = 0.7 )的標準差為: 2.0502
落在平均值正負一個標準差內的比例為: 77.9312 %
二項分布( n = 40 , p = 0.5 )的標準差為: 3.1668
落在平均值正負一個標準差內的比例為: 73.135 %

Figures now render in the Plots pane by default. To make them also appear inline in the Console,
uncheck "Mute Inline Plotting" under the Plots pane options menu.

Python console History
LSP Python: ready  conda (Python 3.7.10)  Line 114, Col 1  UTF-8  CRLF  RW  Mem 82%
```