**Linear Algebra Programming Assignment #1 說明文件**

程式碼執行結果截圖 (Python)

一張含有 文字, 計分板 的圖片

自動產生的描述

作業原始碼連結：<https://github.com/Xanonymous-GitHub/Linear-algebra/blob/master/hw_01/a108820003.py>

**自製核心套件 Xmatrix 說明**

**模組連結：**[**https://pypi.org/project/xmatrix/**](https://pypi.org/project/xmatrix/)

**Usage**

**install**

**模組原始碼連結：**[**https://github.com/Xanonymous-GitHub/xmatrix**](https://github.com/Xanonymous-GitHub/xmatrix)

**pip install xmatrix**

**Add import in your file**

**import xmatrix as Mx**

**from xmatrix import \* # This would be better.**

**create a matrix**

* Matrix("**row** ; **row** ...")

**my\_matrix = Mx.Matrix("1,2;3,4")**

**#result:**

**[1, 2]**

**[3, 4]**

**we also support bigger matrix**

**my\_matrix = Mx.Matrix("1,2,3;4,5,6;7,8,9")**

**#result:**

**[1, 2, 3]**

**[4, 5, 6]**

**[7, 8, 9]**

**simple calculate**

**my\_matrix = Mx.Matrix("1,2;3,4")**

**my\_matrix2 = Mx.Matrix("4,6;2,9")**

**print(my\_matrix + my\_matrix2)**

**#result:**

**[5, 8]**

**[5, 13]**

**print(my\_matrix - my\_matrix2)**

**#result:**

**[-3, -4]**

**[1, -5]**

**print(my\_matrix \* my\_matrix2)**

**#result:**

**[8, 24]**

**[20, 54]**

**print(my\_matrix \* 87)**

**#result:**

**[87, 174]**

**[261, 348]**

**print(my\_matrix \*\* 7)**

**#result:**

**[30853, 44966]**

**[67449, 98302]**

**print(my\_matrix == my\_matrix2)**

**#result:**

**False**

**Transpose Matrix**

**my\_matrix = Mx.Matrix("1,2,3;4,5,6;7,8,9")**

**print(my\_matrix)**

**#result:**

**[1, 2, 3]**

**[4, 5, 6]**

**[7, 8, 9]**

**print(my\_matrix.transpose)**

**#result:**

**[1, 4, 7]**

**[2, 5, 8]**

**[3, 6, 9]**

**my\_matrix2 = Matrix("1,2,3,4;5,6,7,8;9,10,11,12;13.1,14.2,15.3,16.4")**

**print(my\_matrix2)**

**#result:**

**[1, 2, 3, 4]**

**[5, 6, 7, 8]**

**[9, 10, 11, 12]**

**[13.1, 14.2, 15.3, 16.4]**

**print(my\_matrix2.transpose)**

**#result:**

**[1, 5, 9, 13.1]**

**[2, 6, 10, 14.2]**

**[3, 7, 11, 15.3]**

**[4, 8, 12, 16.4]**

**Inverse**

**my\_matrix = Mx.Matrix("1,2;3,4")**

**print(my\_matrix)**

**#result:**

**[1, 2]**

**[3, 4]**

**print(my\_matrix.inverse)**

**#result:**

**[-2, 1]**

**[1.5, -0.5]**

**my\_matrix2 = Mx.Matrix("1,2,3;4,5,6;7,8,9")**

**print(my\_matrix2)**

**#result:**

**[1, 2, 3]**

**[4, 5, 6]**

**[7, 8, 9]**

**print(my\_matrix2.inverse)**

**#result:**

**#The determinant is zero, can't be inverse.**

**#None**

**my\_matrix3 = Mx.Matrix("1,1,1;1,2,3;1,4,5")**

**print(my\_matrix3)**

**#result:**

**[1, 1, 1]**

**[1, 2, 3]**

**[1, 4, 5]**

**print(my\_matrix3.inverse)**

**#result:**

**[1, 0.5, -0.5]**

**[1, -2, 1]**

**[-1, 1.5, -0.5]**

**my\_matrix4 = Mx.Matrix("1,1,2,1;1,1,0,0;1,1,0,1;1,0,1,0")**

**print(my\_matrix4)**

**#result:**

**[1, 1, 2, 1]**

**[1, 1, 0, 0]**

**[1, 1, 0, 1]**

**[1, 0, 1, 0]**

**print(my\_matrix4.inverse)**

**#result:**

**[-0.5, 0, 0.5, 1]**

**[0.5, 1, -0.5, -1]**

**[0.5, 0, -0.5, 0]**

**[0, -1, 1, 0]**

**get the matrix by list**

**my\_matrix = Mx.Matrix("1,2,3;4,5,6;7,8,9")**

**print(my\_matrix.raw)**

**#result:**

**[[1, 2, 3], [4, 5, 6], [7, 8, 9]]**

**get identity Matrix**

**i = Mx.UnitMatrix(3)**

**#result:**

**print(i)**

**[1, 0, 1]**

**[0, 0, 1]**

**[0, 0, 1]**

**若需要證明此套件作者，請立即告知～～**