Matrix App

i) User Manual

To begin, this is a program created in python, which will require the user to have the latest IDLE client. User should download Python 3.5.1 from *https://www.python.org/downloads/*

1. In order to launch the Matrix program console, please **right click** the client.py file and click "edit with **IDLE**" and press F5.

2. Input is done simply with the keyboard, after every command press ENTER for it to register as an action.

3. To **create a matrix**.
   a. A **list of lists** should be created first.
   for example: L1 = [[1, 2, 3],
   [4, 5, 6],
   [7, 8, 9]]

   PLEASE NOTE, L1 = [1,2,3] is not a list of lists, it's simply a list

   b. Type **"**M1 = Matrix (L1)**" without the quotes** in order to create a matrix based on the list of lists L1 and assigning that Matrix the name **M1**.
   c. To display the matrix, type M1 and press ENTER

4. To **transpose** a matrix.
   a. Similarly create another **list of lists** and then a matrix based on that, call it **M2** or anything that fits your desire.
   b. Type **"**T1 = transpose(M2)**" without the quotes** in order to **transpose** the matrix **M2** and assign it the name **T1**.

5. To create an **identity** matrix.
   a. Type " i1 = identity(n)" , here **n** can be **any size but only positive integers**.

6. To **multiply** a matrix.
   a. Create a matrix such as M1 and another one such as M2
   b. Type M1*M2 and the result will appear below.

ii) **Programmers Kit** for matrix.py

This was coded in python 3.5.1. A matrix class was created inheriting the python object class. The initialisation argument just takes in a list of lists. The representation method displays the user the matrix in a friendly way for the user to get a clean experience. The multiplication method requires one argument as the other matrix and performs the task while calling an external function called initial. The initial function creates a default matrix with 0's filling in the spots to be replaced with the matrix multiplier method. An identity matrix creator function also calls the Matrix creation method. Finally a transpose function was also created using the lambda and a one liner list comprehension. Below is a test displaying all the scenarios as the multiplying method also has a Boolean checking the number of rows and colums.