Assignment 9 (CS141, 2021-2022)

Given two matrices M_1 and M_2 of dimensions $m \times n$ and $p \times q$, respectively, we will compute the product of these two matrices. We have seen how `lists` can be used to store a list of numbers. We are now interested in figuring out how to take a two-dimensional array or a matrix as input and store it. Given the number of rows $NRows$ and columns $NCols$ as input, one may use the following code to initialize a matrix filled with ones.

```
NRows, NCols = (10, 10)
Arr=[]
for i in range(NRows):
    Col = []
    for j in range(NCols):
        Col.append(1)
    Arr.append(Col)
print(Arr)
```

The above code will fill the matrix with ones. You may want to print it using `print (Arr)` to check how it looks like. If we want a different matrix than an all ones matrix, we have to fill it up with different values. One possibility is to use a random number generator as follows to fill the matrix with random numbers. Python provides such a function in module `random`. Use the following code to use it.

```
import random
val = random.randrange(10)
# Variable val will store a random number between 0 to 10
```

Use the above code to initialize two matrices M_1 and M_2, where user provides the dimenions m, n, p, q. Check whether these matrices can be multiplied or not. If yes, write code to compute the resulting matric $M_3 = M_1 * M_2$.

Name your submission as `Assgn9-YourRollNo.py` and upload the `.py` file in the google classroom.