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COMSC 140 Python

Program Documentation for

As7\_9\_Two\_Dimensional\_List

1/ Link  
<https://github.com/DVC-COMSC/assignment-7-9-enduringwriter/blob/main/main.py>

2/ Program Purpose  
This program conducts operations on two-dimensional lists, e.g. finding the maximum element in the entire list of lists and the maximum value of each row, and calculating the sum of each row and the sum of each column.

Assumptions:

3/ Input/Output Description  
Input: a 2D list of integers.  
Output: operations on the 2D list of lists.

4/ Explanation of All Variables

numbers = 2D list of integers

r, row = row in the two-dimensional list

i = counter for element in row

def getMaxElement

number\_of\_rows = number of rows in the 2D list

number\_of\_elements\_per\_row = number of elements per row in 2D list

temp\_max = temporary max number

max\_number = maximum number in the 2D list

def getSumRows

sum\_row

sum\_rows

def getSumCols

total\_columns

sum\_cols

row, i = counters

def getMaxElmRow

max\_in\_row = max number in a row

max\_in\_row\_list = list of max number per row

5/ Flow Chart  
Start > Input 2D list of integers > Declare variables > Loop through each row to conduct operations i.e. sum and max value > Loop through each column to conduct operations > Output the results from the operations > End

6/ Lesson Learned  
Learned how to work with 2D lists, which is helpful for datasets/data structures. Learned how to apply operations on columns and rows in a 2D list.

7/ Errors

Looped through column numbers rather than by rows and then by column.

Indentation error for: if temp\_max > max\_number:

For getSumRows, I summed the actual rows and not the elements within the rows.

Incorrectly used sum\_cols[row][i].