Input Of Two Dimensional Lists

Row Wise Sum

Given a 2D integer array of size M*N, find and print the sum of ith row elements separated by space.

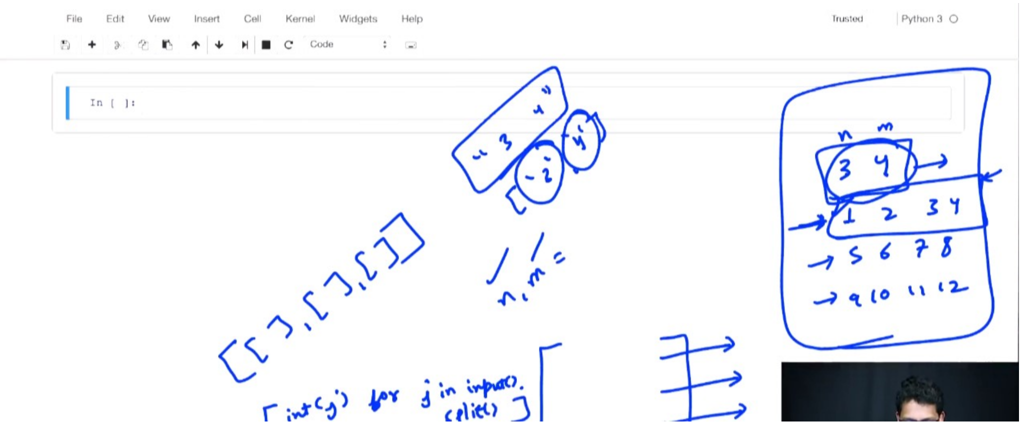
Input Format :
Line 1 : Two integers M and N (separated by space)
Line 2 : Matrix elements of each row (separated by space)

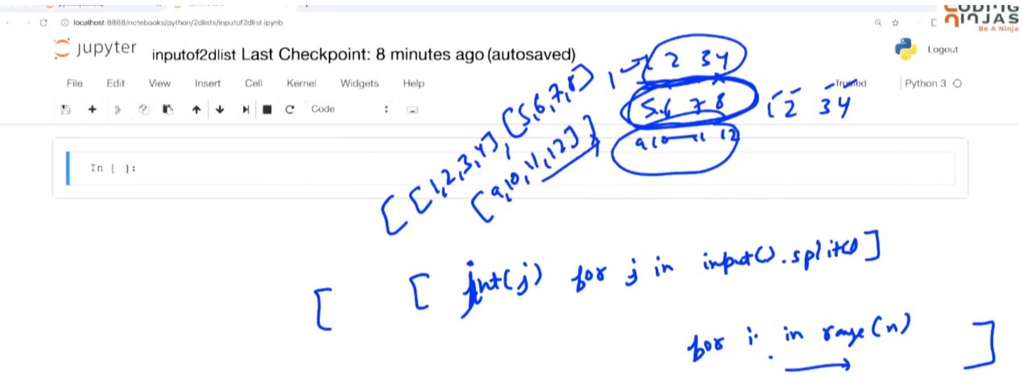
Output Format :
Sum of every ith row elements (separated by space)

Constraints :
0 <= N <= 10^4
0 <= M <= 10^4

Sample Input 1:

```
4 2

1 2
3 4
5 6
7 8
```




localhost:8888/notebooks/python/2dlists/inputof2dlist.ipynb
jupyter inputof2dlist Last Checkpoint: 8 minutes ago (autosaved)
Logout
File Edit View Insert Cell Kernel Widgets Help
Trusted
Python 3
Code
In [ ]:
[[1,2,3,4],[5,6,7,8],[9,10,11,12]]
1 2 3 4
5 6 7 8
9 10 11 12
[2 3 4
[[int(j) for j in input().split()]
for i in range(n)]

In [27]:
```
s = input().split()
n,m = int(s[0]), int(s[1])
```

```
3 4
```

In [28]:
```
# last list for run loops
l_2_d = [ "hello" for i in range(n)]
print(l_2_d)
```

```
['hello', 'hello', 'hello']
```

last list for run loops, first loop for print lists

In [29]:
```
l_2_d = [ [] for i in range(n)]
print(l_2_d)
```

```
[[], [], []]
```

By default it is string

In [9]:
```
l_2_d = [ [ele for ele in input().split()] for i in range(n)]
print(l_2_d)
```

```
1 2 3 4
5 6  7 8
9 10 11 12
[['1', '2', '3', '4'], ['5', '6', '7', '8'], ['9', '10', '11', '1
2']]
```

In [10]:
```
l_2_d = [ [int(ele) for ele in input().split()] for i in range(n)]
l_2_d
```

```
1 2 3 4
5 6 7 8
9 10 11 12
```

Out[10]:
```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [11]:
```
print(l_2_d)
```

```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [13]:
```
j = [print(i) for i in l_2_d]
```

```
[1, 2, 3, 4]
[5, 6, 7, 8]
[9, 10, 11, 12]
```

In [14]:
```
j
```

Out[14]:
```
[None, None, None]
```

In [15]:
```
j = [i for i in l_2_d]
j
```

Out[15]:
```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [18]:
```
j = [print(*i) for i in l_2_d]
j
```

```
1 2 3 4
5 6 7 8
9 10 11 12
```

Out[18]:
```
[None, None, None]
```

Input of jagged list: only take row input, no use of column

In [20]:

```
n = int(input())
l_2_d = [[int(ele) for ele in input().split()] for i in range(n)]
```

```
5
1 2
1 2 4 4
1 3 4
1
1 2 3 4 5
```

In [21]:

```
l_2_d
```

Out[21]:

```
[[1, 2], [1, 2, 4, 4], [1, 3, 4], [1], [1, 2, 3, 4, 5]]
```

In [22]:

```
print(*l_2_d)
```

```
[1, 2] [1, 2, 4, 4] [1, 3, 4] [1] [1, 2, 3, 4, 5]
```

In [23]:

```
j = [print(i) for i in l_2_d]
```

```
[1, 2]
[1, 2, 4, 4]
[1, 3, 4]
[1]
[1, 2, 3, 4, 5]
```

In [24]:

```
j = [print(*i) for i in l_2_d]
```

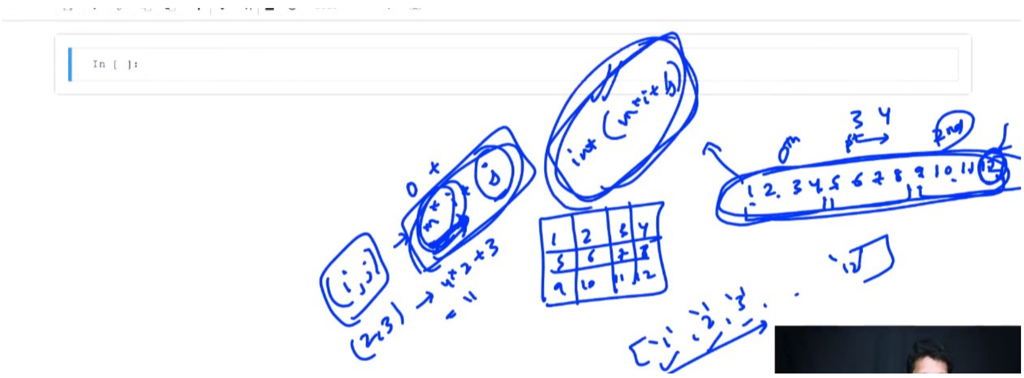
```
1 2
1 2 4 4
1 3 4
1
1 2 3 4 5
```

Another format taking inputs of 2-d array

```
Row Wise Sum
```

```
Given a 2D integer array of size M*N, find and print the sum of
ith row elements separated by space.
```

```
Input Format :
Line 1 : Two integers M and N (separated by space)
Line 2 : Matrix elements of each row (separated by space)

Output Format :
Sum of every ith row elements (separated by space)

Constraints :
0 <= N <= 10^4
0 <= M <= 10^4

Sample Input 1:
4 2
1 2 3 4 5 6 7 8



# lists of lists : m*i + j
# run outer loop n times
# run inner loop column times
# int(2_d_i[m*i+j]): for which element you want from array input
string
```



In [ ]:

In [32]:

```python
s = input().split()
n,m = int(s[0]), int(s[1])

# take all array elements in one line.
arr_i = input().split()


arr = [ [ int(arr_i[m*i+j]) for j in range(m)]for i in range(n)]

print(arr)
```

```
3 4
1 2 3 4 5 6 7  8 9 10 11 12
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [33]:

```python
arr
```

Out[33]:

```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [38]:

```
[print(i) for i in arr]
```

```
[1, 2, 3, 4]
[5, 6, 7, 8]
[9, 10, 11, 12]
```

Out[38]:

```
[None, None, None]
```

Another input form

```
row input array
4 2 1 2 3 4 5 6 7 8
```

In [39]:

```
arr_str = input().split()
n,m = int(arr_str[0]), int(arr_str[1])
arr_in = arr_str[2:]
# take array input
arr = [ [ int(arr_in[m*i + j])  for j in range(m)] for i in range(n

arr
```

```
3 4  1 2 3 4 5 6 7  8 9 10 11 12
```

Out[39]:

```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [40]:

```
print(arr)
```

```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [41]:

```
print(n, m )
```

```
3 4
```

Printing 2-D Array: Iterate on 2-D list

In [42]:
```
arr
```

Out[42]:
```
[[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

In [43]:
```
n
```

Out[43]:
```
3
```

In [44]:
```
m
```

Out[44]:
```
4
```

In [46]:
```
# printing 2-d array
for i in arr:
    print(i)
```

```
[1, 2, 3, 4]
[5, 6, 7, 8]
[9, 10, 11, 12]
```

In [57]:
```
# printing 2-d array
for i in range(n):
    for j in range(m):
        # each row in one line , break after one row
        print(arr[i][j],end=" ")
    print()
```

```
1 2 3 4
5 6 7 8
9 10 11 12
```

Printing Jagged List

In [58]:
```
jag = [[1, 2], [1, 2, 4, 4], [1, 3, 4], [1], [1, 2, 3, 4, 5]]
```

In [66]:

```
jag
```

Out[66]:

```
[[1, 2], [1, 2, 4, 4], [1, 3, 4], [1], [1, 2, 3, 4, 5]]
```

In [68]:

```
n = 5
```

In [69]:

```
# printing jagged list
# for row
for i in range(n):
    #for column
    for j in j[i]:
        print(j, end=" ")
    print()
```

```
1 2
1 2 4 4
1 3 4
1
1 2 3 4 5
```

In [70]:

```
# another way
# iterate over main list
for i in jag:
    # iterate over inner lists
    for j in i:
        print(j, end=" ")

    print()
```

```
1 2
1 2 4 4
1 3 4
1
1 2 3 4 5
```

Using Join()

In [71]:

```
"ab".join("-")
```

Out[71]:

```
'-'
```

Not join after last element

```
In [74]:  "-".join("abc")
```

```
Out[74]: 'a-b-c'
```

```
In [78]: "ab".join([1,2,3])
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent c
all last)
<ipython-input-78-63a96a800c83> in <module>
----> 1 "ab".join([1,2,3])

TypeError: sequence item 0: expected str instance, int found
```

```
In [79]: "ab".join("1234")
```

```
Out[79]: '1ab2ab3ab4'
```

```
In [80]: "ab".join("abcd")
```

```
Out[80]: 'aabbabcabd'
```

String cant concate with list

```
In [83]: "ab".join([1,2,3])
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent c
all last)
<ipython-input-83-63a96a800c83> in <module>
----> 1 "ab".join([1,2,3])

TypeError: sequence item 0: expected str instance, int found
```

```
In [84]: "ab".join(['1','2','3'])

Out[84]: '1ab2ab3'
```

```
In [85]: jag

Out[85]: [[1, 2], [1, 2, 4, 4], [1, 3, 4], [1], [1, 2, 3, 4, 5]]
```

```
In [88]: str(jag)

Out[88]: '[[1, 2], [1, 2, 4, 4], [1, 3, 4], [1], [1, 2, 3, 4, 5]]'
```

```
In [86]: n

Out[86]: 5
```

Join operation not working on last element of iterable.

```
In [94]: for i in jag:
             out = " ".join([str(x) for x in i])
             print(out)

         1 2
         1 2 4 4
         1 3 4
         1
         1 2 3 4 5
```

```
In [ ]:
```