Back

Congrats Daniel! This project has been marked as completed.

Project Rating

★★★★☆

Teacher's Comment

"very good"

-

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PRO-C124: MATRIX MANIPULATION Completed

In Class 124, We Learned How To Perform Different Operations On 1d And 2d Lists And Arrays. In This Project, We Are Going To Use These Methods To Perform Some More Operations On Arrays.

Previous Submissions

7th Mar 2024 Open Link

Start Project

Goal of the Project:

In class 124, we learned how to perform different operations on 1D and 2D lists and arrays. In this project, we are going to use these methods to perform some more operations on arrays.

Story:

At the Chicago School of Artificial Intelligence, an archery competition is held for Robots. **Archery-Target** is a game in which the players shoot sharp-pointed arrows at a round target having 10 rings. Joseph has to train his robot to hit the Bull's eye in the very first attempt. He needs your help so that he can use the RL method to train the robot to play archery.

To train the robot Joseph has to deal with different types of arrays and hence he need help to perform operations on arrays. Can you help him to do so?

Project Template Output	Print Elements of Array **Problem**: Given 1X1 Array: `arr_1d = [53, 78, 90, 12, 15, 65, 44, 32, 29, 36]` 1. Print 3rd and 9th element of the array. 2. Change 3rd and 9th element to 100.

Expected Output	`90`
	`29`
	`[ 53  78 100  12  15  65  44  32 100  36]`

Project Template Output	Update Diagonal Elements of Multidimensional Array
	Problem: Given a 3x3 array, change all the diagonal elements of the matrix to 0.
	`arr_2d = [[1,2,3],`
	`[4,5,6],`
	`[7,8,9]]`

Expected Output	`print(arr_2d)`
	`[[0 2 3]`
	`[4 0 6]`
	`[7 8 0]]`

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Class Summary

This project is based on your last class PRO-C124

View Class Summary

Ask a doubt to your tea

HELP

Project Template Output	Numbers of Rows & Column
	
	Problem: Write a program to find the number of rows and columns
	
	`A= [[9,5,6,1,-2],`
	`[3,-8,1,2,0],`
	`[6,9,3,3,5]]`

Expected Output	`print('number of rows = ',rows)`
	`print('number of columns = ',cols)`
	
	`number of rows = 3`
	`number of columns = 5`

Project Template Output	Scalar Multiplication **Problem**: Print each element of the following matrix. Initialize the matrix using NumPy. Also, multiply the matrix with n = 150 and print the matrix after multiplication. `B=[[-8,0,2,4],[5,2,-1,7]]`

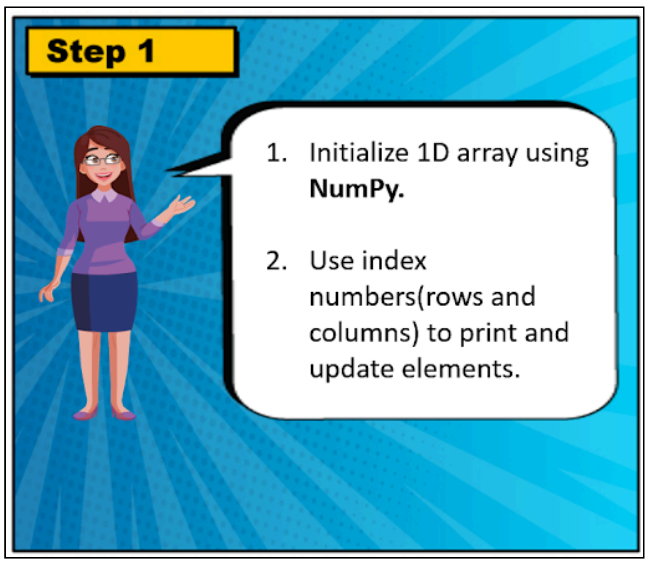
Expected Output	`print('\n', C)`
	
	`Element 1 is -8`
	`Element 2 is 0`
	`Element 3 is 2`
	`Element 4 is 4`
	`Element 5 is 5`
	`Element 6 is 2`
	`Element 7 is -1`
	`Element 8 is 7`
	
	`[[-1200. 0. 300. 600.]`
	`[ 750. 300. -150. 1050.]]`

*This is just for your reference. We expect you to apply your own creativity to the project.

Getting Started:

1. Open the boilerplate link.

Specific Tasks to complete the Project:

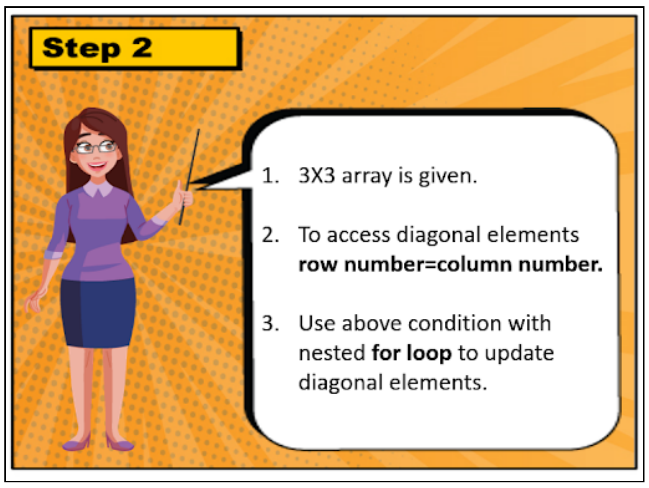


HELP

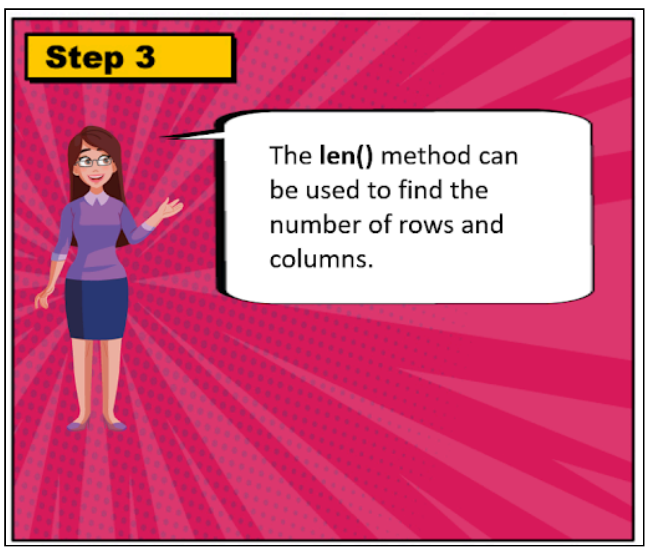
```
# write code here

import numpy as np

arr_1d = np.array([53, 78, 90, 12, 15, 65, 44, 32, 29, 36])
```

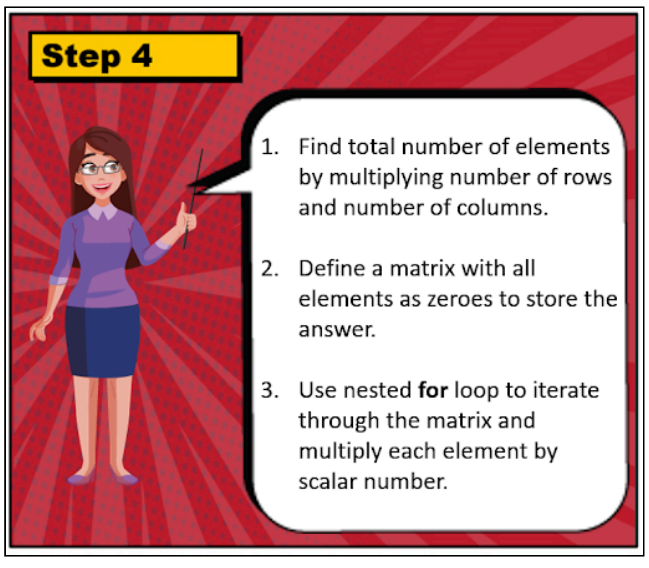



```
for i in range(rows):
  for j in range(cols):
    if i==j:
```




```
#Length of A = rows

#Length of first array=number of column
```




```
n=rows*cols          #total number of elements

C=np.zeros([rows,cols])
```

Submitting the Project:

1. **SAVE** all the changes made to the project.
2. Click on **"Run"** once to check if it is working.

HELP

3. Open GitHub and create a repository named **Project124**.
4. Click **Share**.

5. Click Change and choose the **'anyone with the link'** option.

Hints:

In step 4, to display the matrix elements, you can use count for displaying element number. Here, n is the total number of elements present in the 2D array.

```
if count<=n:
  print('Element ',count,' is ', B[i][j])
  count+=1
```

HELP