NUMPY PANDAS MATPLOTLIB 1

29-jan-2025
Instructions:
Name must be written in markdown for every code file.
Graph should be cleanly arranged with suitable labels, legends and titles wherever required.

* Required

* This form will record your name, please fill your name.

1

what is the dimension of following code[[1,2,3], [2,3,4]]

- ◯ 2
- ◯ 2,3
- ◯ 3,2
- ◯ No dimension for the given data type

2

what is the output of following code: import numpy as np

```
two = np.array([[[[19,22,60],[10,20,6],[50,9,45],[10,29,15]],
                [[39,62,10],[15,80,16],[53,19,45],[10,29,15]]],
                [[[19,22,60],[10,20,6],[50,9,45],[10,29,15],
                [[39,62,10],[15,80,16],[53,19,45],[10,29,15]]]])
print(two.shape)
print(two.ndim)
```

- ◯ Name Error : Two is not defined
- ◯ Syntax Error : closing parenthesis
- ◯ (2,2,4,3) and 4
- ◯ ValueError: setting an array element with a sequence.

3

what is the output for given print statements

```
a=np.array([[[[1,2],[4,7]],[[5,3],[5,3]]],
            [[[10,20],[40,70]],[[50,30],[15,13]]]])
print(a.ndim)
print(a.itemsize)
print(a.shape)
```

- 4 8 (2,2,2,2)
- 8 4 (2,2,2,2)
- 4 4 (2,2,2,2)
- 8 4 (2,2,4,2)

4

Which code is used to set the axis start point and end point for x start point as 2 , end point as 10 and for y axis start point as 5 , end point as 100

- plt.xticks([2,10]), plt.yticks([5,100])
- plt.axis([2,10, 5, 100)
- plt.axis([2, 5, 10,100])
- plt.xyticks([2,5, 10,100])

5

what is the outcome of the following code:
import numpy as np
arr_rand = np.array([8, 18, 33,7, 10, 4, 12, 53, 2, 0, 20,30,40])
np.argmax(arr_rand)

- 8
- 7
- 12
- 13

6

which is the correct syntax to stack the arrays vertically. if a and b are arrays of shape (3,3)

- [ ] np.concatenate(a,b)
- [ ] np.concatenate([a,b])
- [ ] np.concatenate([a,b], axis = 0)
- [ ] np.concatenate([a,b], axis = 1)

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Which of the following input can be accepted by DataFrame()?

- ◯ Structured ndarray
- ◯ DataFrame
- ◯ All of the above
- ◯ None of the above

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How to save graph in a file format

- [ ] savefig(obj_graph)
- [ ] plt.savefig(obj_graph)
- [ ] plt.figsave(obj_graph)
- [ ] matplotlib.pyplot.savefig(obj_graph)

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The code will generate the NameError when _____

```
plt.plot(randomNumber,"o", linewidth = 6, label = "Team A")
plt.xlabel("Time in seconds")
plt.ylabel("movement")
plt.title("MOVEMENTS of Team")
```

- TeamA is not defined
- randomNumber is not defined
- ylabel is not having any value
- linewidth = 0

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```
import numpy as np
arr = np.array([[1,3,6],[3,7,2]])
arr.dim
```

- 2
- 2,3
- TypeError
- AttributeError

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xlabel() is used for

- setting the values on x axis
- setting the name on x axis
- setting the coordinates on x axis
- all of the above

12

The result of an operation between unaligned Series will have the _____ of the indexes involved.

- ◯ intersection
- ◯ union
- ◯ differences
- ◯ None of the above

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if a and b are arrays of shape (4,4) what is the code to get following output

```
array([[0., 0., 0., 0., 1., 1., 1., 1.],
       [0., 0., 0., 0., 1., 1., 1., 1.],
       [0., 0., 0., 0., 1., 1., 1., 1.],
       [0., 0., 0., 0., 1., 1., 1., 1.]])
```

- ☐ np.concatenate([a, b], axis=1)
- ☐ np.vstack([a,b])
- ☐ np.c_[a,b]
- ☐ np.c_([a,b], axis = 1)

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which statement is true for the given code

```
plt.plot(randomNumber,"o", linewidth = 6, label = "Team A")
plt.xlabel("Time in seconds")
plt.ylabel("movement")
plt.title("MOVEMENTS of Team")
plt.xticks([0,1,2,3,4,5,6,7,8,9], label = "VALUES")
plt.legend()
```

- ◯ label on x axis will be Time in second
- ◯ Label on x axis is Team A
- ◯ Label on x axis is VALUES
- ◯ Legend wil be Team A and VALUES

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what is the correct code to extract values from given data frame

	a	b	c	d
P	1	10	12	AA
Q	2	11	23	BB
R	3	12	34	VV
S	3	21	34	CC
T	4	13	45	DD

- [ ] df1.loc['P']
- [ ] df1.loc['P', [a,b,d]]
- [ ] df1.iloc['P', ['a','b','d']]
- [ ] df1.iloc[0, [0,1,3]]

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Output of the following is

```
from numpy.random import randn
df = pd.DataFrame(randn(5,4), columns=['V',"W","X","Y", 'Z'],
                  index= "A B C D E".split())
df
```

- ◯ Generate the dataframe with 5 rows and 4 columns
- ◯ ValueError Due to columns parameter
- ◯ ValueError due to randn function
- ◯ Value error due to index string

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```
s2 = pd.Series(["_0", "_1", "_2", "_3"])
result = pd.concat([df1, s2, s2, s2], axis=1)
result
```

- ◯ result will display error due to series
- ◯ result will display with data frame and three rows added
- ◯ result will display with data frame and three columns added with all Nan values
- ◯ result will display with data frame and three columns

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which statement is true about the code

```
s3 = pd.Series([0, 1, 2, 3], name="foo")
s4 = pd.Series([0, 1, 2, 3])
s5 = pd.Series([0, 1, 4, 5])
d=  pd.concat([s3, s4, s5])
type(d)
```

- ◯ type of d is Data Frame
- ◯ type of d is series
- ◯ pd.concate will generate the error
- ◯ None of the above

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which is the part of box plot

- ☐ mean
- ☐ 25%
- ☐ median
- ☐ mode

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which statement(s) is/are True for the given code
plt.subplot(3, 2, 4) *

- [ ] this will generate canvas for total 6 subplot
- [ ] this will generate canvas for total 8 subplot
- [ ] figure will create 3 row and 2 columns of subplot
- [ ] figure will create 2 row and 4 columns of subplot

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Q1) Read the pockemon.csv data from the dataset and generate the bar graph for average of HP, attack, defense for type1 and type2

Q2) Using matplotlib create four subplot having a) boxplot for attack and special attack b) boxplot of defense and special defense c) scatter plot for hp against speed

Q3) calculate the average of total and speed for type1 as a poison and Fire with type2 as Flying and group. check the same result for type1 as Flying and group and type2 as poison and Fire. Conclude the outcome

Q4) Perform descriptive statistics on Pockemon data using the code and conclude the interpretation

Q5) Find all unique type1 and type2 where total score is more than 500 but attack and defense is more than average attack and average defense *

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