Day-4 Quiz-DataScience-Training

Welcome to the Python Programming Quiz! This quiz tests your knowledge of Python, Pandas and matplotlib. Please read the instructions carefully before starting the quiz.

Instructions and Rules

- **Time Limit:** You have 20 minutes to complete the quiz.
- **Number of Questions:** The quiz consists of 20 multiple-choice questions.
- **Scoring:** Each correct answer is worth 1 point. There is no negative marking for incorrect answers.
- **Single Attempt:** You are allowed only one attempt to complete the quiz.
- **Required Fields:** All questions are mandatory. You must answer each question to submit the quiz.
- **Resources:** This is a closed-book quiz. Do not use any external resources, including books, notes, or the internet.
- **Honesty:** Please answer the questions honestly and to the best of your ability. Cheating or dishonesty will result in disqualification.
- **Environment:** Ensure you are in a quiet environment where you can concentrate without interruptions.
- **Technical Issues:** In case of technical issues, please contact the quiz administrator immediately.
- **Retakes:** There are no retake opportunities for this quiz. Ensure you are prepared before starting.

Good luck, and do your best!

* Indicates required question

1. Email *

2. **1. What does the reshape method do in NumPy?** *

Mark only one oval.

- A. Changes the shape of an array without changing its data
- B. Changes the data in the array
- C. Deletes elements from the array
- D. Adds new elements to the array

3. **2. What will be the output of the following code?** *

```
import numpy as np
a = np.array([[1, 2, 3], [4, 5, 6]])
print(a.flatten())
```

Mark only one oval.

- A. [1, 2, 3, 4, 5, 6]
- B. [[1, 2, 3], [4, 5, 6]]
- C. [1, 2, 3]
- D. Error

4. **3. What is the output of the following code?** *

```
import numpy as np
a = np.array([[1, 2], [3, 4]])
print(np.sum(a, axis=0))
```

Mark only one oval.

- A. [4, 6]
- B. [1, 2, 3, 4]
- C. [10]
- D. [3, 7]

5. **4. How can you create an array with values from 10 to 20?** *

Mark only one oval.

- A. np.array(range(10, 21))
- B. np.arange(10, 21,2)
- C. np.linspace(10, 20, 10)
- D. np.arange(10, 21, 1)

6. **5. Which function is used to perform matrix multiplication in NumPy?** *

Mark only one oval.

- A. np.multiply()
- B. np.dot()
- C. np.matmul()
- D. np.prod()

7. **6. What is the output of the following code?** *

```
import pandas as pd
data = {'a': [1, 2], 'b': [3, 4]}
df = pd.DataFrame(data)
print(df.shape)
```

Mark only one oval.

- A. (2, 2)
- B. (2, 1)
- C. (1, 2)
- D. (4, 2)

8. **7. How do you drop a column from a DataFrame?** *

Mark only one oval.

- A. df.drop_column('col_name')
- B. df.drop('col_name', axis=1)
- C. df.delete('col_name')
- D. df.remove('col_name')

9. **8. How do you filter rows in a DataFrame where column 'a' is greater than 2?** *

Mark only one oval.

- A. df[df['a'] > 2]
- B. df.filter('a' > 2)
- C. df[df.a > 2]
- D. df.filter(a > 2)

10. **9. How do you concatenate two DataFrames vertically?** *

Mark only one oval.

- A. pd.concat([df1, df2], axis=1)
- B. pd.concat([df1, df2])
- C. pd.concat([df1, df2], axis=0)
- D. pd.append([df1, df2])

11. **10. Which method is used to apply a function along an axis of the DataFrame?** *

Mark only one oval.

- A. df.apply()
- B. df.applymap()
- C. df.transform()
- D. df.map()

12. **11. What does the following code do?** *

```
import pandas as pd

df = pd.DataFrame({
    'A': [1, 2, 3, 4],
    'B': [5, 6, 7, 8]
})

df['C'] = df.groupby('A')['B'].transform('sum')
print(df)
```

Mark only one oval.

- A. Sums the values in column 'B' grouped by unique values in column 'A' and stores the result in column 'C'.
- B. Sums the values in column 'A' grouped by unique values in column 'B' and stores the result in column 'C'.
- C. Creates a cumulative sum of column 'B' and stores it in column 'C'.
- D. Sums the values in column 'B' and stores the result in column 'C'.

13. **12. Which method would you use to replace missing values in a DataFrame with specified values for each column?** *

Mark only one oval.

- A. df.fillna()
- B. df.replace()
- C. df.interpolate()
- D. df.fillna(value={'column1': value1, 'column2': value2})

14. **13. What is the result of using the join method in Pandas?** *

Mark only one oval.

- A. It concatenates DataFrames along the columns.
- B. It merges DataFrames based on a key column.
- C. It performs an SQL-style join using the index.
- D. It appends one DataFrame to another.

15. **14. What parameter would you use with the merge method to perform an outer join?** *

Mark only one oval.

- A. how='inner'
- B. how='left'
- C. how='right'
- D. how='outer'

16. **15. How do you convert the data type of a column in a DataFrame to int?** *

Mark only one oval.

- A. df['column'].astype('int')
- B. df['column'].convert('int')
- C. df['column'].to('int')
- D. df['column'].type('int')

17. **16. Which method would you use to replace NaN values in a DataFrame with the mean of the column?** *

Mark only one oval.

- A. df.fillna(df.mean())
- B. df.replace(df.mean())
- C. df.dropna()
- D. df.interpolate(df.mean())

18. **17. What is the output of the following code?** *

```
import matplotlib.pyplot as plt
x = [1, 2, 3]
y1 = [4, 5, 6]
y2 = [7, 8, 9]
plt.plot(x, y1, label='Line 1')
plt.plot(x, y2, label='Line 2')
plt.legend()
plt.show()
```

Mark only one oval.

- A. A single line plot with no legend
- B. Two line plots with no legend
- C. Two line plots with a legend
- D. An error

19. **18. Which method is used to save a plot to a file in Matplotlib?** *

Mark only one oval.

- A. plt.savefig()
- B. plt.save()
- C. plt.export()
- D. plt.file()

20. **19. Which function is used to set the labels for the x-axis and y-axis in Matplotlib?** *

Mark only one oval.

- A. plt.xlabel() and plt.ylabel()
- B. plt.xaxis() and plt.yaxis()
- C. plt.set_xlabel() and plt.set_ylabel()
- D. plt.axis_label()

21. **20. Which function is used to create a horizontal bar plot in Matplotlib?** *

Mark only one oval.

- A. plt.barh()
- B. plt.bar()
- C. plt.hbar()
- D. plt.hbarplot()