Assignments-3

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Assignments Questions

Q1. How to create numpy array by list, explain this examples.
Q2. Write a code to find the following characteristics of variable, num_array:
(i) shape
(ii) size
Q3. Write a code to create numpy array of 3*3 matrix containing zeros only, using a numpy array creation function.
[Hint: The size of the array will be 9 and the shape will be (3,3).]
Q4. Create an identity matrix of shape (5,5) using numpy functions?
[Hint: An identity matrix is a matrix containing 1 diagonally and other elements will be 0.]
Q5. How will you create a Numpy array of first 10 natural numbers?

Consider following code to answer further questions:

```
import pandas as pd

course_name = ['Data Science', 'Machine Learning', 'Big Data', 'Data Engineer']
duration = [2,3,6,4]
df = pd.DataFrame(data = {'course_name' : course_name, 'duration' : duration})
```

Q6. Write a code to print the data present in the second row of the dataframe, df.
Q7. What is the difference between the functions loc and iloc in pandas.DataFrame?
Q8. Reindex the given dataframe using a variable, reindex = [3,0,1,2] and store it in the variable, new_df then find the output for both new_df.loc[2] and new_df.iloc[2].
Did you observe any difference in both the outputs? If so then explain it.

Consider the below code to answer further questions:

```
import pandas as pd
import numpy as np
columns = ['column_1', 'column_2', 'column_3', 'column_4', 'column_5', 'column_6']
indices = [1,2,3,4,5,6]
#Creating a dataframe:
df1 = pd.DataFrame(np.random.rand(6,6), columns = columns, index = indices)
```

Q9. Write a code to find the following statistical measurements for the above dataframe df1:
(i) mean of each and every column present in the dataframe.
(ii) standard deviation of column, 'column_2'
Q10. Replace the data present in the second row of column, 'column_2' by a string variable then find the mean of column, column_2.
If you are getting errors in executing it then explain why.
[Hint: To replace the data use df1.loc[] and equate this to string data of your choice.]

Note: All Answers must be submitted in pdf file.