Assignment - I

BASIC PYTHON CODE

Assignment Date	2 September 2022
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Maximum marks	2 marks

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# Basic Python
## 1. Split this string
s = "Hi there Sam!"
# Splits at space
print(s.split())
## 2. Use .format() to print the following string.

### Output should be: The diameter of Earth is 12742 kilometers.
planet = "Earth"
diameter = 12742
# Reverse the index numbers with the
# parameters of the placeholders
print('The diameter of {0} is {1} kilometer'.format(planet,diameter))
## 3. In this nest dictionary grab the word "hello"
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
#In this nest dictionary grabing the word "hello"
print(d["k1"][3]["tricky"][3]["target"][3])
# Numpy
import numpy as np
## 4.1 Create an array of 10 zeros?
## 4.2 Create an array of 10 fives?
#array of 10 zeros
x=np.zeros(10)
print(x)
# array of 10 fives
y=np.ones(10)*5
print(y)
## 5. Create an array of all the even integers from 20 to 35
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#array of all the even integers from 20 to 35
z=np.arange(20,36,2)
print(z)
## 6. Create a 3x3 matrix with values ranging from 0 to 8
#3x3 matrix with values ranging from 0 to 8
x =  np.arange(0, 9).reshape(3,3)
print(x)
## 7. Concatenate a and b
## a = np.array([1, 2, 3]), b = np.array([4, 5, 6])
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
#Concatenate
np.concatenate((a,b),axis=None)
# Pandas
## 8. Create a dataframe with 3 rows and 2 columns
import pandas as pd
A = np.random.randint(10, size=(3,2))
#dataframe
df = pd.DataFrame(A,columns=['cola', 'colb'])
df
dict_a = {
  'col_a':[1,2,3],
  'col_b': [2,5,6],
}
#dataframe
df = pd.DataFrame(dict_a)
df
lst_a = [['John', 23], ['Jane', 25], ['Mary', 21]]
#dataframe
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df = pd.DataFrame(lst_a,columns=['Name', 'Age'])
df
## 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023
import pandas as pd

# calling DataFrame constructor
df = pd.DataFrame()

# Create 6 dates
df['time'] = pd.date_range(start="1/1/2023",end="2/10/2023", freq ='24H')
  # print dataframe

# Extract features - year, month, day, hour, and minute
df['year'] = df['time'].dt.year
df['month'] = df['time'].dt.month
df['day'] = df['time'].dt.day



# Show six rows
df.head(len(df["time"]))
## 10. Create 2D list to DataFrame

lists = [[1, 'aaa', 22],
        [2, 'bbb', 25],
        [3, 'ccc', 24]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
#2D list to DataFrame
df = pd.DataFrame(lists, columns =['col1',"col2","col3"])
df
```