INDIAN SCHOOL AL WADI AL KABIR

Class: 12ᵗʰ	Department: Computer Science	Date of submission: 15/09/2021
Worksheet 3	IP SAMPLE PAPER	Note:

1. Mr. Ankit is working in an organization as data analyst. He uses Python Pandas and Matplotlib for the same. He got a dataset of the passengers for the year 2010 to 2012 for January, March and December. His manager wants certain information from him, but he is facing some problems. Help him by answering few questions given below:

	Year	Month	Passengers
0	2010	Jan	25
1	2010	Mar	50
2	2012	Jan	35
3	2010	Dec	55
4	2012	Dec	65

Code to create the above data frame:

```
import pandas as _____ #Statement 1
data={"Year":[2010,2010,2012,2010,2012],"Month":["Jan","Mar","Jan","Dec","Dec"],"Passengers":[25,50,35,55,65]}
df=pd._____(data) #Statement 2
print(df)
```

i. Choose the right code from the following for statement 1.

   i. pd

   ii. df

   iii. data

   iv. p

ii. Choose the right code from the following for the statement 2.

   i. Dataframe

   ii. DataFrame

   iii. Series

   iv. Dictionary

iii Choose the correct statement/ method for the required output:
. (5,3)

i   i. df.index

ii   ii. df.shape()

iii   iii. df.shape

iv   iv. df.size

He wants to print the details of "January" month along with the number of passengers,
iv Identify the correct statement:
.

	Month	Passengers
0	Jan	25
2	Jan	35

i   i. df.loc[['Month','Passengers']][df['Month']=='Jan']

ii   ii. df[['Month','Passengers']][df['Month']=='Jan']

iii   iii. df.iloc[['Month','Passengers']][df['Month']=='Jan']

iv   iv. df(['Month','Passengers']][df['Month']=='Jan')

v.   Mr. Ankit wants to change the index of the Data Frame and the output for the same is given below. Identify the correct statement to change the index.

	Year	Month	Passengers
Air India	2010	Jan	25
Indigo	2010	Mar	50
Spicejet	2012	Jan	35
Jet	2010	Dec	55
Emirates	2012	Dec	65

i. df.index[]=["Air India","Indigo","Spicejet","Jet","Emirates"]

ii. df.index["Air India","Indigo","Spicejet","Jet","Emirates"]

iii. df.index=["Air India","Indigo","Spicejet","Jet","Emirates"]

iv. df.index()=["Air India","Indigo","Spicejet","Jet","Emirates"]

2.   Mr. Sharma is working in a game development industry and he was comparing the given chart on the basis of the rating of the various games available on the play store.

He is trying to write a code to plot the graph. Help Mr. Sharma to fill in the blanks of the code and get the desired output.
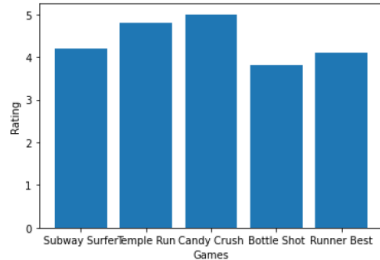

```
import_____ #Statement 1
Games=["Subway Surfer","Temple Run","Candy Crush","Bottle Shot","Runner Best"]
Rating=[4.2,4.8,5.0,3.8,4.1]
plt._____(Games,Rating) #Statement 2
plt.xlabel("Games")
plt._____("Rating") #Statement 3
plt._____ #Statement 4
```

i.   Choose the right code from the following for statement 1.

i. matplotlib as plt

ii. pyplot as plt

iii. matplotlib.pyplot as plt

iv. matplotlib.plt as pyplot

ii.   Identify the name of the function that should be used in statement 2 to plot the above graph.

i. line()

ii. bar()

iii. hist()

iv. barh()

iii   Choose the correct option for the statement 3.
.
i. title("Rating")

ii. ytitle("Rating")

iii. ylabel("Rating")

iv. yaxis("Rating")

iv   Choose the right function/method from the following for the statement 4.

.   i. display()

ii. print()

iii. bar()

iv. show()

v.   In case Mr. Sharma wants to change the above plot to the any other shape, which statement, should he change.

i. Statement 1

ii. Statement 2

iii. Statement 3

iv. Statement 4

3.   Answer the following based on the series given below.

```
import pandas as pd
list1=[1,2,3,4,5,6,7,8]
list2=['swimming','tt','skating','kho kho', 'bb', 'chess', 'football',"cricket"]
school=pd.Series(list1,index=list2)
school.name=("little")
print (school*2) #statement 1
print (school.tail(3)) # statement 2
print (school["tt"]) # statement 3
print (school[2:4]) # statement 4
```

i.   Choose the correct name of the series object given above.

a) list1

b) list2

c) school

d) little

ii.   Choose the correct output for the statement:

      print (school.tail(3)) # statement 2

a.

  swimming 1

tt 2
skating 3

b.
chess 6
football 7
cricket 8

c.
4

d.
kho kho 4
bb 5
chess 6
football 7
cricket 8

iii. Choose the correct output for the statement:
print (school["tt"]). # statement 3
a. 2
b. 3
c. tt 2
d. true

iv. Identify the correct output for:
print (school[2:4]) # statement 4.
a.
skating 3
kho kho 4
b.
tt 2
skating 3
kho kho 4
c.
skating 3
kho kho 4
bb 5
d.
skating 3
kho kho 4

bb 5
chess 6
football 7
cricket 8

v. The correct output of the statetment:

print (school*2) # statement 1 will be .

a.
    swimming 3
    tt 4
    skating 5
    kho kho 6
    bb 7
    chess 8
    football 9cricket 10
b.
    swimming 2
    tt 4
    skating 6
    kho kho 8
    bb 10
    chess 12
    football 14
    cricket 16
c.
    swimming False
    tt False
    skating True
    kho kho True
    bb True
    chess True
    football True
    cricket True
d.
    swimming 1
    tt 4
    skating 9

kho kho 16
bb 25
chess 36
football 49
cricket 64

4. Sanyukta is the event incharge in a school. One of her students gave her a suggestion to use Python Pandas and Matplotlib for analysing and visualising the data, respectively. She has created a Data frame "SportsDay" to keep track of the number of First, Second and Third prizes won by different houses in various events.

	House	First	Second	Third
0	Chenab	5	7	6
1	Ganges	10	5	4
2	Jamuna	8	13	15
3	Jhelum	12	9	12
4	Ravi	5	11	10
5	Satluj	10	5	3

Write Python commands to do the following:

i.   Display the house names where the number of Second Prizes are in the range of 12 to 20.

a. df['Name'][(df['Second']>=12) and (df['Second']<=20)]

b. df[Name][(df['Second']>=12) & (df['Second']<=20)]

c. df['Name'][(df['Second']>=12) & (df['Second']<=20)]

d. df[(df['Second']>=12) & (df['Second']<=20)]

ii. Display all the records in the reverse order.

a. print(df[::1])

b. print(df.iloc[::-1])

c. print(df[-1:]+df[:-1])

d. print(df.reverse())

iii Display the bottom 3 records.
.   a. df.last(3)

b. df.bottom(3)

c. df.next(3)

d. df.tail(3)

iv   Choose the correct output for the given statements:

.   x=df.columns[:1]

print(x)

a. 0

b. Name

c. First

d. Error

v.   Which command will give the output 24:

a. print(df.size)

b. print(df.shape)

c. print(df.index)

d. print(df.axes)

5.   Pushpa, a student of class-XII, has been assigned a code to create a panda series S1, as shown below.

a 100

b 200

c 300

d 400

e 500

dtype: int64

With reference to the above answer given questions:

i.   Choose the command that will give the following output-

b 200

c 300

dtype: int64

a. print(S1[:3])

b. print(S1[0:3])

c. print(S1[1:3])

d. print(S1[2:4])

ii. Help him to identify the correct statement that can be used to extract the value with the index 'c'
a. print(S1[c])
b. print(S1(c))
c. print('S1' ['c'])
d. print(S1 ['c'])

iii. Which of the following command will give the following output-
b 200
d 400
dtype: int64

a. print(S1.iloc[1:4])
b. print(S1.iloc[2:4])
c. print(S1.iloc(1:4))
d. print(S1.iloc[1:4:2])

iv. Which of the following command will display the series by adding 10 in each value.
a. print(S1 [+10])
b. print(S1+10)
c. print(S1)+10
d. print(S1)+print(10)

v. Pushp wants to delete the value against index 'd'. Help him to choose the suitable option to do so:
a. S1=S1.drop(d)
b. S1=S1.drop('d')
c. S1=drop('d')
d. S1=S1.drop['d']

6. The command to install the pandas is: a. install pip pandas b. install pandas c. pip pandas d. pip install pandas.
a. install pip pandas
b. install pandas
c. pip pandas
d. pip install pandas

7.   Out of the following, which function cannot be used for customization of charts in Python?
a. xlabel()
b. colour()
c. title()
d. xticks()

8.   _____ is the function to save the graph.
a. Savefig()
b. Savefigure()
c. Savegraph()
d. Savechart()

9.   Method or function to add a new row in a data frame is:
a. .loc()
b. .iloc()
c. join
d. add()

10.   What is the minimum number of arguments required for plot() function in matplotlib?
a. 1
b. 2
c. 3
d. 4

11.   Which of the following import statement is not correct?
a. import pandas as class12
b. import pandas as 1pd
c. import pandas as pd1
d. import pandas as pd

12.   While accessing the column from the data frame, we can specify the column name. In case column does not exist, which type of error it will raise:
a. Key Error
b. Syntax Error
c. Name Error
d. Runtime Error

13.   Which of the following is not an attribute of pandas data frame?
a. length

b. T
c. Size
d. shape

14. What will be the output of the given code? import pandas as pd s = pd.Series([1,2,3,4,5], index=['akram','brijesh','charu','deepika','era']) print(s['charu'])
a. 1
b. 2
c. 3
d. 4

15. Assuming the given series, named stud, which command will be used to print 5 as output?
Amit   90
Ramesh 100
Mahesh 50
john   67
Abdul   89
Name: Student, dtype: int64
a. stud.index
b. stud.length
c. stud.values
d. stud.size