

Quiz 4 — 11/20/2024

Instructions

You have 15 minutes to complete this quiz. You may **not** use any outside assistance on this quiz. This quiz is closed book, closed notes, and closed internet.

Write your answers on the provided answer sheet.

There are 8 problems, worth 1 point each. You will receive 2 free points. The quiz is worth a total of 10 points.

Problem 1

Consider the DataFrame below, named `one` :

	Station	Color	Attendance
0	A	red	5
1	A	blue	7
2	B	red	8
3	B	blue	2
4	C	red	6
5	C	blue	9

What is the result of the code below?

```
(
    one
    .pivot_table(
        index=['Station'],
        columns='Color',
        values='Attendance'
    )
    .reset_index()
    .rename_axis(columns=None)
)
```

A.

	Station	blue	red
0	A	7	5
1	B	2	8
2	C	9	6

C.

	Station	Attendance
0	A	12
1	B	10
2	C	15

B.

	Station	A	A	B	B	C	C
Color		red	blue	red	blue	red	blue
Attendance		5	7	8	2	6	9

D.

	Color	Attendance
0	blue	18
1	red	19

Problem 2

Consider the DataFrame below, named `two` :

	Station	M	T	W	R	F
0	A	10	8	9	11	10
1	B	15	13	16	17	15
2	C	20	21	23	25	21

What is the result of the code below?

```
(
    two
    .melt(
        id_vars='Station',
        var_name='Day',
        value_name='Attendance'
    )
)
```

A.

	Day	M	T	W	R	F
Attendance	45	42	48	53	46	

C.

	Station	Attendance
0	A	48
1	B	76
2	C	110

B.

	Station	M	T	W	R	F
0	A	10	8	9	11	10
1	B	15	13	16	17	15
2	C	20	21	23	25	21

D.

	Station	Day	Attendance
0	A	M	10
1	B	M	15
2	C	M	20
3	A	T	8
4	B	T	13
5	C	T	21
6	A	W	9
7	B	W	16
8	C	W	23
9	A	R	11
10	B	R	17
11	C	R	25
12	A	F	10
13	B	F	15
14	C	F	21

Problem 3

Consider the DataFrame below, named `three` :

	Station	Fraction
0	A	16/25
1	B	25/30
2	C	8/10

What is the result of the code below?

```
(
    three
    .assign(
        Attendance=lambda x: x['Fraction'].str.split(pat='/', expand=True)[0].astype(int),
        Capacity=lambda x: x['Fraction'].str.split(pat='/', expand=True)[1].astype(int)
    )
)
```

A.

	Station	Fraction	Attendance	Capacity
0	A	16/25	16	25
1	B	25/30	25	30
2	C	8/10	8	10

B.

	Station	Fraction	Attendance	Capacity
0	A	16/25	16/25	16/25
1	B	25/30	25/30	25/30
2	C	8/10	8/10	8/10

C.

	Station	Fraction
0	A	16/25
1	B	25/30
2	C	8/10

D.

	Station	Fraction
0	A	16 25
1	B	25 30
2	C	8 10

Problem 4

Consider the DataFrame below, named `four` :

	Station	TimeAttendance
0	A	AM010
1	A	PM006
2	B	AM005
3	B	PM020

What is the result of the code below?

```
(
    four
    .assign(
        Time=lambda x: x['TimeAttendance'].str[0:2],
        Attendance=lambda x: x['TimeAttendance'].str[2:].astype(int)
    )
)
```

A.

	Station	TimeAttendance
0	A	AM 010
1	A	PM 006
2	B	AM 005
3	B	PM 020

B.

	Station	TimeAttendance	Time	Attendance
0	A	AM010	AM	10
1	A	PM006	PM	6
2	B	AM005	AM	5
3	B	PM020	PM	20

C.

	Station	TimeAttendance	Time	Attendance
0	A	AM010	AM010	AM010
1	A	PM006	PM006	PM006
2	B	AM005	AM005	AM005
3	B	PM020	PM020	PM020

D.

	Station	TimeAttendance
0	A	AM010
1	A	PM006
2	B	AM005
3	B	PM020

Problem 5

Consider the two DataFrames below. The one on the left is named `five_a`, and the one on the right is named `five_b`.

	Station	red	blue
0	A	9	2
1	B	3	4
2	C	5	6

	Station	red	blue
0	D	8	0
1	E	5	1
2	F	4	2

What is the result of the code below?

```
pd.concat([five_a, five_b])
```

A.

	Station	red	blue	Station	red	blue
0	A	9	2	D	8	0
1	B	3	4	E	5	1
2	C	5	6	F	4	2

B.

	Station	red	blue
0	AD	17	2
1	BE	8	5
2	CF	9	8

C.

	Station	red	blue
0	A	9	2
1	B	3	4
2	C	5	6
0	D	8	0
1	E	5	1
2	F	4	2

D.

	Station	AD	BE	CF
	red	17	8	9
	blue	2	5	8

Problem 6

Consider the two DataFrames below. The one on the left is named `six_left`, and the one on the right is named `six_right`.

	Station	red
0	A	5
1	B	9
2	C	7
3	D	2

	Station	blue
0	A	0
1	C	3
2	E	8

What is the result of the code below?

```
six_left.merge(six_right, on='Station', how='right')
```

A.

	Station	red	blue
0	A	5	0.0
1	B	9	NaN
2	C	7	3.0
3	D	2	NaN

B.

	Station	red	blue
0	A	5	0
1	C	7	3

C.

	Station	red	blue
0	A	5.0	0.0
1	B	9.0	NaN
2	C	7.0	3.0
3	D	2.0	NaN
4	E	NaN	8.0

D.

	Station	red	blue
0	A	5.0	0
1	C	7.0	3
2	E	NaN	8

Problem 7

Consider the two DataFrames below. The one on the left is named `seven_left` , and the one on the right is named `seven_right` . (They are actually the same DataFrames as the ones in Problem 6.)

	Station	red
0	A	5
1	B	9
2	C	7
3	D	2

	Station	blue
0	A	0
1	C	3
2	E	8

What is the result of the code below?

```
seven_left.merge(seven_right, on='Station', how='outer')
```

A.

	Station	red	blue
0	A	5	0
1	C	7	3

B.

	Station	red	blue
0	A	5	0.0
1	B	9	NaN
2	C	7	3.0
3	D	2	NaN

C.

	Station	red	blue
0	A	5.0	0.0
1	B	9.0	NaN
2	C	7.0	3.0
3	D	2.0	NaN
4	E	NaN	8.0

D.

	Station	red	blue
0	A	5.0	0
1	C	7.0	3
2	E	NaN	8

Problem 8

Consider the two DataFrames below. The one on the left is named `eight_left` , and the one on the right is named `eight_right` .

	Station	Time	Attendance
0	A	morning	10
1	A	afternoon	6
2	B	morning	5
3	B	afternoon	20

	Station	Capacity
0	A	25
1	B	30

What is the result of the code below?

```
eight_left.merge(eight_right, on='Station')
```

A.

	Station	Time	Attendance	Capacity
0	A	morning	10	25
1	A	afternoon	6	25
2	B	morning	5	30
3	B	afternoon	20	30

B.

	Station	afternoon	morning	Capacity
0	A	6	10	25
1	B	20	5	30

C.

	Station	Attendance	Capacity
0	A	16	25
1	B	25	30

D.

	Station	Time	Attendance	Capacity
0	A	morning	10	25
1	B	morning	5	30