

# R Programming Survey

In this survey, you will examine 12 pairs of code snippets regarding dataframes in Python and R. For each pair, you will be asked whether or not you think the R output is surprising given a dataframe and some operation performed on it. NOTE: The dataframe will be the same throughout the survey.

\* Required

1. Email address \*

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**Given the dataframe 'df' in Python and R:**

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

**and executing the following:**

**Python:** `df[['A', 'B']]`**Output:**

	A	B
0	0.0	7
1	NaN	3
2	9.0	2
3	5.0	0
4	3.0	4
5	NaN	3

**R:** `select(df, A, B)`**Output:**

A	B
0	7
NaN	3
9	2
5	0
3	4
NaN	3

2. 1. Does the R output surprise you? \*

Mark only one oval.

☐ Yes

☐ No

3. Briefly explain why:

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2. Given the dataframe 'df' in Python and R:

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7		a
	NaN	3	b
9	2		c
	5	0	d
	3	4	e
	NaN	3	f

and executing the following:

**Python:** `df.query("foobar == 'a'")`**R:** `filter(df, foobar == 'a')`**Output:**

	A	B	foobar
0	0.0	7	a

**Output:**

A	B	foobar
0	7	a

**4. 2. Does the R output surprise you? \****Mark only one oval.*

- ☐ Yes
- ☐ No

**5. Briefly explain why:**


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**3. Give the dataframe 'df' in Python and R:**

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

and executing the following:

**Python:** `df.iloc[0:2, 1:3]`**R:** `df[1:2, 2:3]`**Output:**

	B	foobar
0	7	a
1	3	b

	B	foobar
7	a	
3	b	

**6. 3. Does the R output surprise you? \****Mark only one oval.*☐ Yes☐ No**7. Briefly explain why:**


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#### 4. Give the dataframe 'df' in Python and R:

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0		7	a
	NaN	3	b
9		2	c
	5	0	d
3		4	e
	NaN	3	f

and executing the following:

**Python:** `df[['B']].drop_duplicates()`

**R:** `distinct(select(df, B))`

**Output:**

	B
0	7
1	3
2	2
3	0
4	4

**Output:**

B
7
3
2
0
4

8. 4. Does the R output surprise you? \*

Mark only one oval.

- ☐ Yes
- ☐ No

**9. Briefly explain why:**

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**5. Give the dataframe 'df' in Python and R:****Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

**and executing the following:**

**Python:** `df.describe()`

**Output:**

	A	B
<b>count</b>	4.000000	6.000000
<b>mean</b>	4.250000	3.166667
<b>std</b>	3.774917	2.316607
<b>min</b>	0.000000	0.000000
<b>25%</b>	2.250000	2.250000
<b>50%</b>	4.000000	3.000000
<b>75%</b>	6.000000	3.750000
<b>max</b>	9.000000	7.000000

**R:** `df[1:2, ]`

**Output:**

	A	B	foobar
0	7		a
NaN	3		b

10. **5. Does the R output surprise you? \***

*Mark only one oval.*

☐ Yes

☐ No

11. **Briefly explain why:**

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**6. Give the dataframe 'df' in Python and R:**

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

and executing the following:

**Python:** `df.iloc[0:2]`**R:** `slice(df, 1:2)`**Output:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b

**Output:**

	A	B	foobar
0	7	a	
NaN	3	b	

12. 6. Does the R output surprise you? \*

*Mark only one oval.*

- ☐ Yes
- ☐ No

13. Briefly explain why:

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## 7. Give the dataframe 'df' in Python and R:

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

and executing the following:

**Python:** `df.head()`

**Output:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e

**R:** `head(df)`

**Output:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

14. 7. Does the R output surprise you? \*

Mark only one oval.

☐ Yes

☐ No

15. Briefly explain why:

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8. Given the dataframe 'df' in Python and R:

Python:

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

R:

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

and executing the following:

**Python:** `df[0:1]`**Output:**

	A	B	foobar
0	0.0	7	a

**R:** `df[0:1]`**Output:**

A
0
NaN
9
5
3
NaN

16. 8. Does the R output surprise you? \*

*Mark only one oval.*

☐ Yes

☐ No

17. Briefly explain why:

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**9. Given the dataframe 'df' in Python and R:**

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

and executing the following:

**Python:** `df[0:2]`**R:** `df[1:2, ]`**Output:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b

**Output:**

	A	B	foobar
0	7	a	
NaN	3	b	

18. 9. Does the R output surprise you? \*

*Mark only one oval.*

- ☐ Yes
- ☐ No

19. Briefly explain why:

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**10. Given the dataframe 'df' in Python and R:**

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7		a
NaN	3		b
9	2		c
5	0		d
3	4		e
NaN	3		f

and executing the following:

**Python:** `df.drop(['A'], axis=1)`**R:** `select(df, -A)`**Output:**

	B	foobar
0	7	a
1	3	b
2	2	c
3	0	d
4	4	e
5	3	f

**Output:**

	B	foobar
7		a
3		b
2		c
0		d
4		e
3		f

20. 10. Does the R output surprise you? \*

*Mark only one oval.*☐ Yes☐ No

21. Briefly explain why:

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11. Given the dataframe 'df' in Python and R:

**Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

and executing the following:

**Python:** `df.loc[df.A > 1, ]`

**R:** `df[df$A > 1, ]`

**Output:**

	A	B	foobar
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e

**Output:**

	A	B	foobar
NA	NA	NA	NA
3	9	2	c
4	5	0	d
5	3	4	e
NA.1	NA	NA	NA

**22. 11. Does the R output surprise you? \****Mark only one oval.*☐ Yes☐ No**23. Briefly explain why:**

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**12. Given the dataframe 'df' in Python and R:****Python:**

	A	B	foobar
0	0.0	7	a
1	NaN	3	b
2	9.0	2	c
3	5.0	0	d
4	3.0	4	e
5	NaN	3	f

**R:**

	A	B	foobar
0	7	a	
NaN	3	b	
9	2	c	
5	0	d	
3	4	e	
NaN	3	f	

**and executing the following:**

**Python:** `df[['A']]`

**Output:**

	A
0	0.0
1	NaN
2	9.0
3	5.0
4	3.0
5	NaN

**R:** `df[['A']]`

**Output:**

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[1] 0 NaN 9 5 3 NaN
```

24. 12. Does the R output surprise you? \*

Mark only one oval.

☐ Yes

☐ No

25. Briefly explain why:

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## Exit Survey

Below, we ask you to rate your experience with Python, the Pandas library and R.

26. How familiar are you with Python? \*

Mark only one oval.

	1	2	3	4	5	
Unfamiliar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Familiar

27. How familiar are you with Python's Pandas library? \*

Mark only one oval.

	1	2	3	4	5	
Unfamiliar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Familiar



**28. How familiar are you with R? \****Mark only one oval.*

	1	2	3	4	5	
Unfamiliar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Familiar

## Thank you

Thanks for contributing to our research. Our goal is to help people transfer knowledge from one programming language to another. We are currently investigating misconceptions programmers might hold onto when switching to a new language. Contact Nischal at [nshrest@ncsu.edu](mailto:nshrest@ncsu.edu) if you have any further questions and/or comments.

☐ Send me a copy of my responses.

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