

Analytics of Business Intelligence - Fall 2019, Practice Set # 2

df				
	year	fruit	price	qty
1	2014.00	apple	2.00	10.00
2	2015.00	plum	4.00	20.00
3	2016.00	orange	6.00	30.00
4	2017.00	apple	8.00	40.00
5	2018.00	cherry	10.00	50.00

1. Using table df, convert it to a data.table.
2. Using table df, create table df2 with just the fruit and price columns.
3. Using table df, rename the columns 'year', 'fruit', 'price' and 'qty' to 'y', 'f', 'p', and 'q'.
4. Create a new column, oprice, that will be the price 2 rows before, so that df looks like this:

	year	fruit	price	qty	oprice
1	2014.00	apple	2.00	10.00	
2	2015.00	plum	4.00	20.00	
3	2016.00	orange	6.00	30.00	2.00
4	2017.00	apple	8.00	40.00	4.00
5	2018.00	cherry	10.00	50.00	6.00

5. Create a new column, oprice, that will be the previous year's price for each particular fruit, given the table below:

dft				
	year	fruit	price	qty
1	2016	apple	2.00	10.00
2	2016	plum	4.00	20.00
3	2016	orange	6.00	30.00
4	2016	melon	8.00	40.00
5	2016	cherry	10.00	50.00
6	2017	apple	2.00	20.00
7	2017	plum	8.00	20.00
8	2017	orange	8.00	40.00
9	2017	melon	6.00	10.00
10	2017	cherry	8.00	40.00
11	2018	apple	6.00	10.00
12	2018	plum	4.00	10.00
13	2018	orange	2.00	40.00
14	2018	melon	2.00	10.00
15	2018	cherry	10.00	20.00

6. Create a new column, oprice, that will be the previous year's price for each particular fruit, and a column, oqty, that will be the qty from 2 years ago for each particular fruit given the table below:

dft				
	year	fruit	price	qty
1	2016	apple	2.00	10.00
2	2016	plum	4.00	20.00
3	2016	orange	6.00	30.00
4	2016	melon	8.00	40.00
5	2016	cherry	10.00	50.00
6	2017	apple	2.00	20.00
7	2017	plum	8.00	20.00
8	2017	orange	8.00	40.00
9	2017	melon	6.00	10.00
10	2017	cherry	8.00	40.00
11	2018	apple	6.00	10.00
12	2018	plum	4.00	10.00
13	2018	orange	2.00	40.00
14	2018	melon	2.00	10.00
15	2018	cherry	10.00	20.00

7. Using the table from question # 6, create a column total, that is price * qty.
8. Using the table from question # 6, create a table dfs that will be just the years from 2016 and 2017 and just for the fruits; apple, plum, and melon.
9. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit=='orange' & qty==40]
```

10. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit=='orange',qty]
```

11. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit=='orange',.(qty)]
```

12. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit=='orange',.(price,qty)]
```

13. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit=='orange',sum(price)]
```

14. Using table dft from question # 6, what is the result of the code below:

```
1 dft[year==2017,sum(price),by=fruit]
```

15. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit %in% c('apple','plum'),sum(price)]
```

16. Using table dft from question # 6, what is the result of the code below:

```
1 dft[fruit %in% c('apple','plum'),sum(price),by=year]
```

17. Using table dft from question # 6, what is the result of the code below:

```
1 dft[,price2:=shift(price,n=1)]  
2 dft[year==2017,sum(price2)]
```

18. Using table dft from question # 6, what is the result of the code below:

```
1 dft[,c('price2','price3'):=shift(price,n=1:2)]  
2 dft[year==2017,sum(price3)]
```

19. Using table dft from question # 6, what is the result of the code below:

```
1 dft[,price2:=shift(price,n=1)]  
2 dft[year==2017,sum(price2),by=fruit]
```

20. Using table dft from question # 6, what is the result of the code below:

```
1 dft[,c('price2','price3'):=shift(price,n=1:2)]  
2 dft[year==2017,sum(price3),by=fruit]
```