



DSFA
Spring 2019

Lecture 10

Table Examples

Announcements

- Prelim 1
 - Next Thursday
 - Practice questions posted this weekend

Combining Table Methods

Important Table Methods

`t.select(column, ...)` or `t.drop(column, ...)`

`t.take([row, ...])` or `t.exclude([row, ...])`

`t.sort(column, descending=False, distinct=False)`

`t.where(column, are.condition(...))`

`t.apply(function, column, ...)`

`t.group(column)` or `t.group(column, function)`

`t.group([column, ...])` or `t.group([column, ...], function)`

`t.pivot(cols, rows)` or `t.pivot(cols, rows, vals, function)`

`t.join(column, other_table, other_table_column)`

Joining Two Tables

Keep all rows in the table that have a match ...

```
drinks.join('Cafe', discounts, 'Location')
```

... for the value in this column ...

... somewhere in this other table's ...

... column that contains matching values.

drinks

Drink	Cafe	Price
Milk tea	Panda Tea	4
Espresso	Gimme	2
Latte	Gimme	3
Espresso	Cafe Gola	2

discounts

Coupon	Location
25%	Panda Tea
50%	Gimme
5%	Gimme

The joined column is sorted automatically

(Demo)

Cafe	Drink	Price	Coupon
Gimme	Espresso	2	50%
Gimme	Espresso	2	5%
Gimme	Latte	3	50%
Gimme	Latte	3	5%
Panda Tea	Milk Tea	4	25%

Discussion Question

Generate a table with one row per cafe that has the name and discounted price of its cheapest discounted drink

drinks

Drink	Cafe	Price
Milk tea	Panda Tea	4
Espresso	Gimme	2
Coffee	Gimme	3
Espresso	Cafe Gola	2

discounts

Coupon	Location
25%	Panda Tea
50%	Gimme
5%	Gimme

cheapest

Cafe	Drink	Discounted Price
Panda Tea	Milk Tea	3
Gimme	Espresso	1

Booleans and Advanced Where

Comparison Operators

The result of a comparison expression is a **bool** value

`x = 2`

`y = 3`

Assignment statements

`x > 1`

`x > y`

`y >= 3`

`x == y`

`x != 2`

`2 < x < 5`

Comparison
expressions

`t.where(array_of_bool_values)` returns a table with only the rows of `t` for which the corresponding **bool** is **True**.

(Demo)

Sample Prelim Question

Sample Prelim Question

	start	end	duration
	Metropolitan Ave & Bedford Ave	Bedford Ave & Nassau Ave	6.06667
	Lafayette St & E 8 St	2 Ave & E 104 St	35.7
	Schermerhorn St & Court St	Court St & Nelson St	5.46667

- What is the name of the station where the most rentals ended? (Assume no ties.)
 - For how many stations was the average duration of a trip ending at that station at least 10 minutes?
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