Tidy data

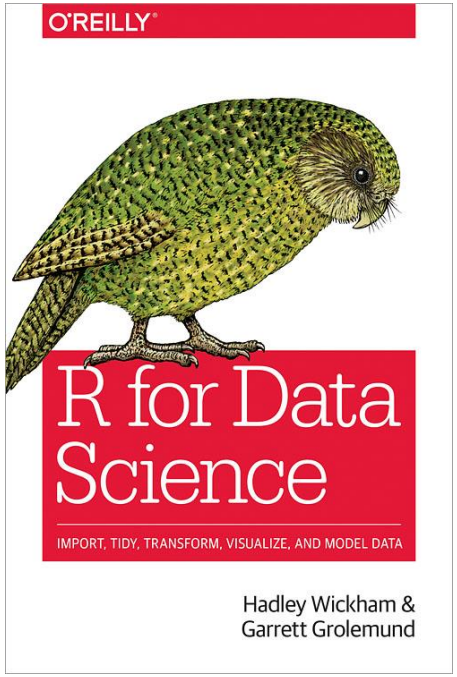
Tidy data

"Tidy datasets are all alike, but every messy dataset is messy in its own way."

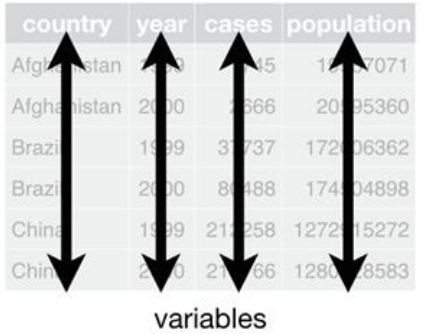
— Hadley Wickham

Acknowledgements

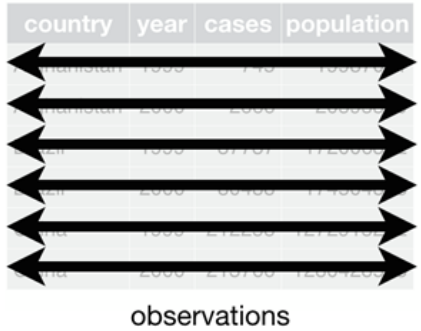
Material for this Tidy data and Relational data sessions draws heavily on Chapters 9 and 10 of:



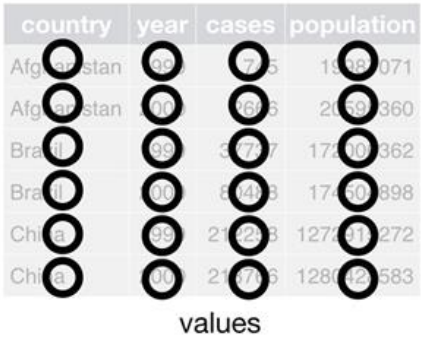
Tidy data



Each variable has its own column.



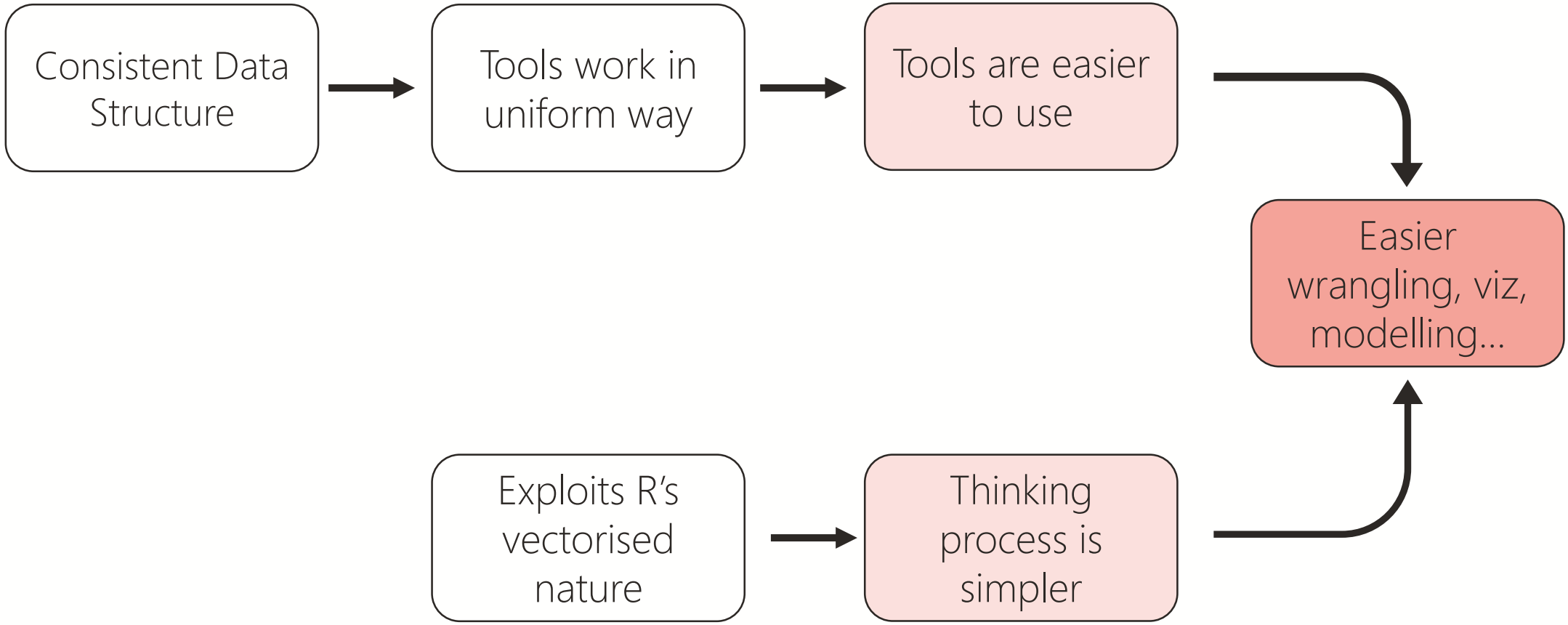
Each observation has its own row.



Each value has its own cell.

Image: R for Data Science

Why tidy data?



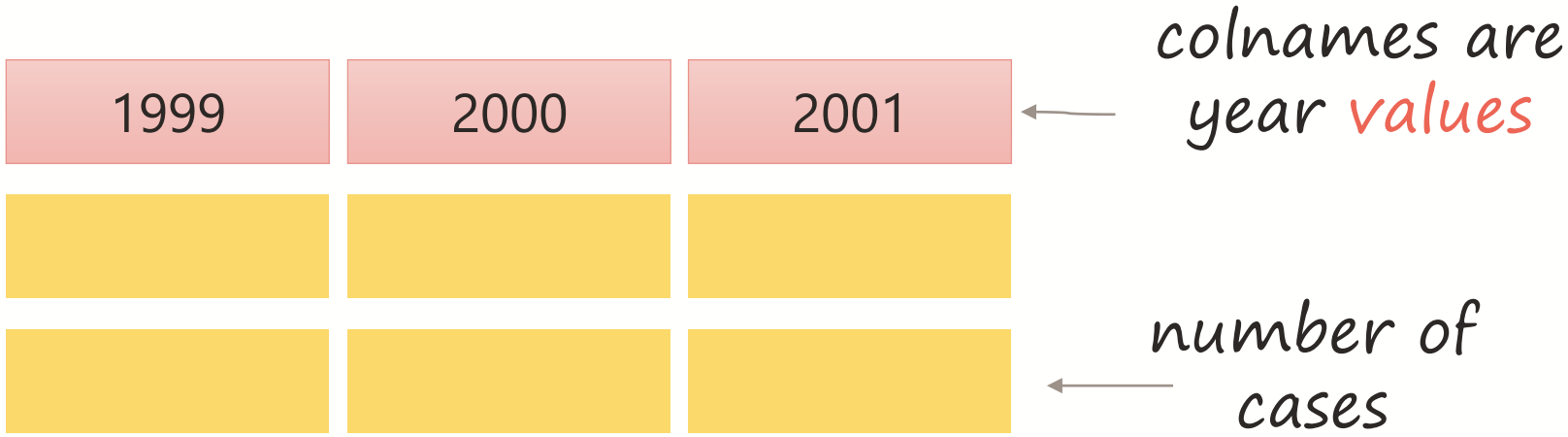
Tidy data

Load the original tb_cases and population data sets (as you did yesterday afternoon. This (wide table) is similar to the format used by the W.H.O.

Your turn

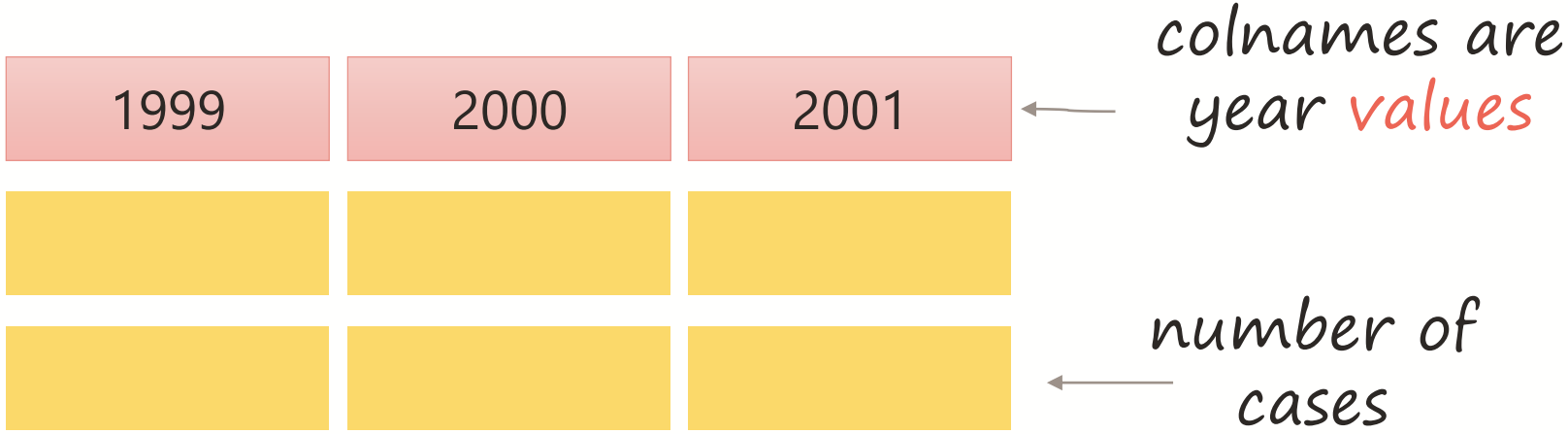
Having loaded these tables, can we now join them two tables together?

Tidying data


1999
2000
2001
colnames are year values
number of cases

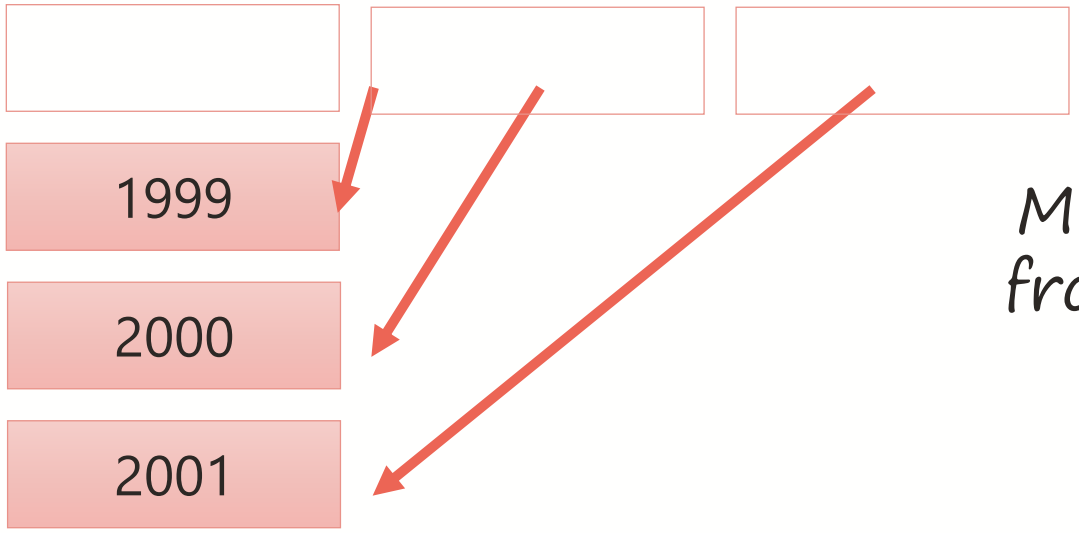
gather

```
tb_cases %>%
  gather(year, cases,    )
```



gather

```
tb_cases %>%
  gather(year, cases,    )
```



Move values from header to cells

gather

```
tb_cases %>%
  gather(year, cases,    )
```

name

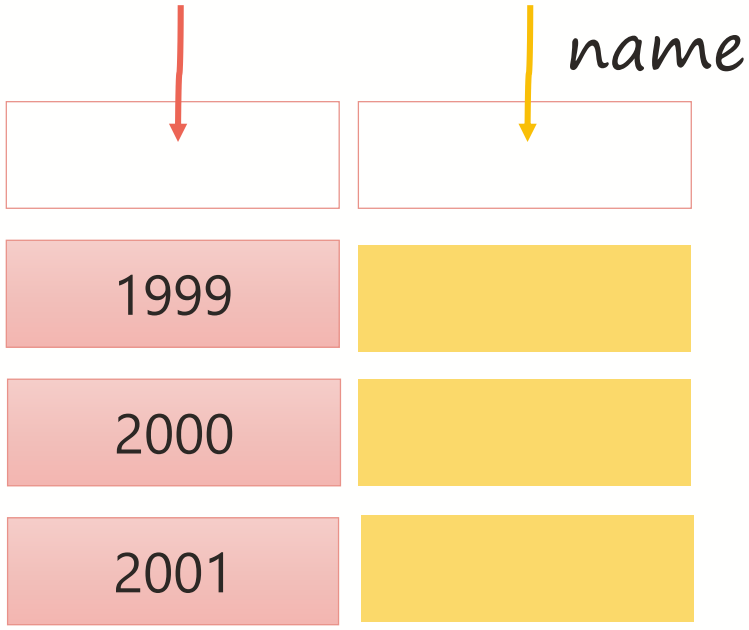
1999

2000

2001

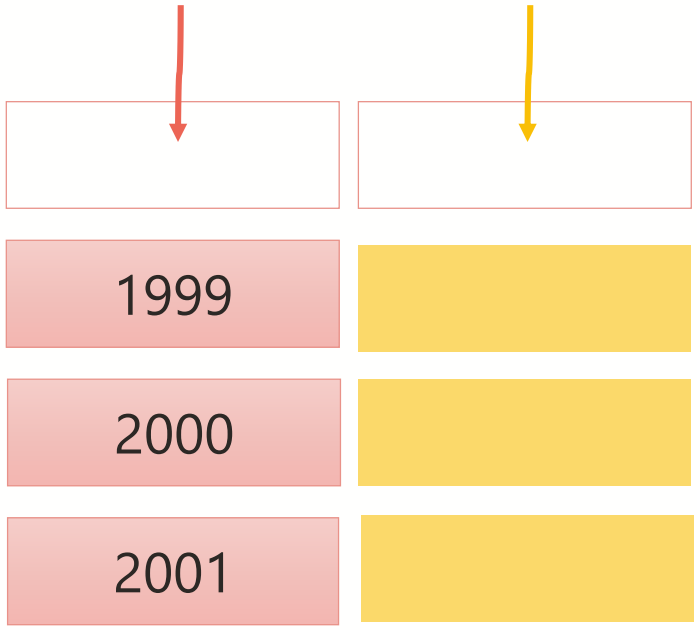
gather

```
tb_cases %>%
  gather(year, cases,     )
```

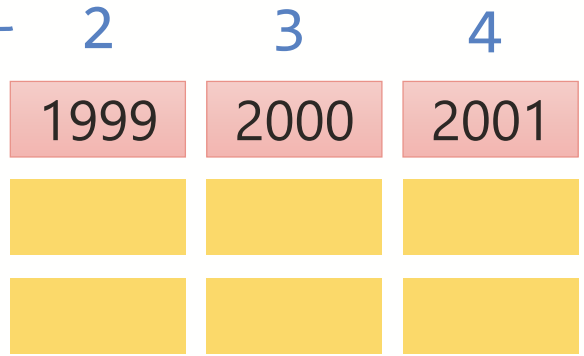


gather

```
tb_cases %>%
  gather(year, cases, 2:4 )
```



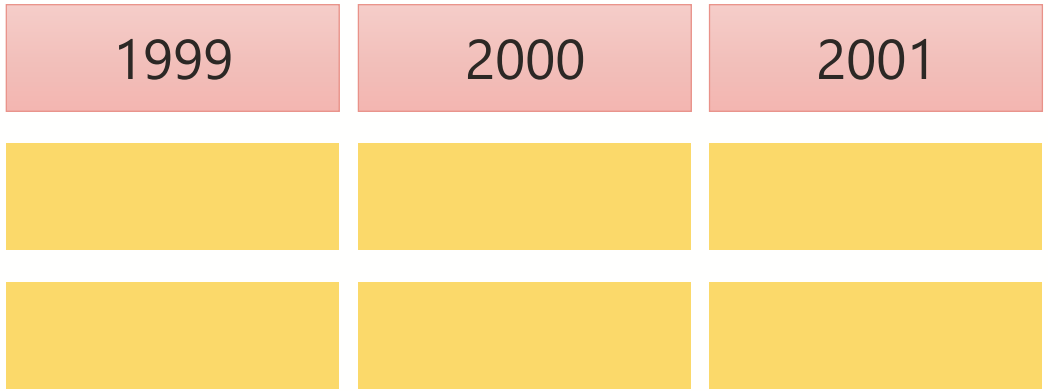
Original table



Note:
You will actually need 2:5

Your turn: Tidy "pop"

```
pop %>%
  gather(    ,    ,    )
```

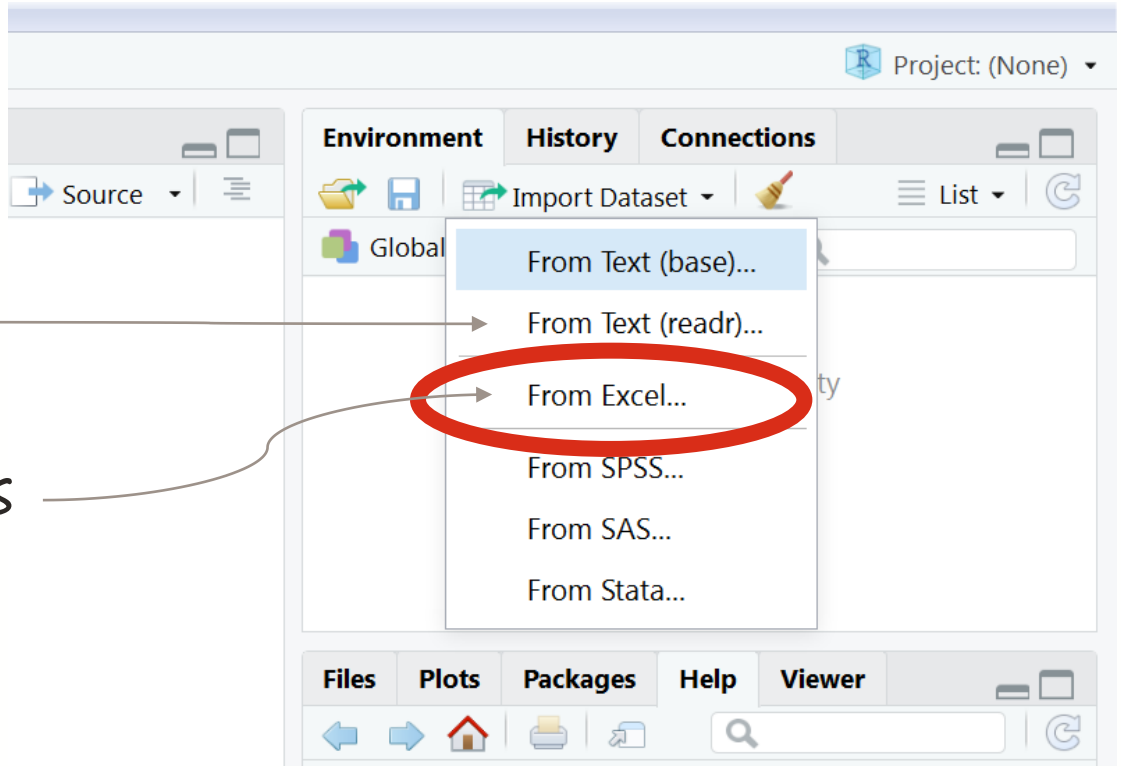


colnames are year values

population values

Import Excel workbooks

Import data_spread.xlsx . Assign to object "table2"



for csvs

for Excel workbooks (will require package: readxl)

spread

does the opposite of gather:

```
table2 %>%
  spread(key = type, value = count)
```

Column containing variable names

Column that contains values

Real life example:

You've found ONS population projections that you'd like to use for forecasting future healthcare utilisation. Load into R and tidy!

This work is licensed as

End

Tidy data?

```
# A tibble: 6 x 6
  manufacturer model              displ  year   cty   hwy
  <chr>        <chr>              <dbl> <int> <int> <int>
1 audi         a4 quattro          2.00  2008    19    27
2 dodge        durango 4wd         3.90  1999    13    17
3 dodge        ram 1500 pickup 4wd 4.70  2008    12    16
4 ford         f150 pickup 4wd     4.60  2008    13    17
5 nissan       pathfinder 4wd      3.30  1999    15    17
6 subaru       forester awd        2.50  2008    18    23
```

Why tidy data?

```
# A tibble: 12 x 6
   manufacturer model              displ  year environment   mpg
   <chr>        <chr>              <dbl> <int> <chr>       <int>
 1 audi         a4 quattro          2.00  2008 cty            19
 2 audi         a4 quattro          2.00  2008 hwy            27
 3 dodge        durango 4wd         3.90  1999 cty            13
 4 dodge        ram 1500 pickup 4wd 4.70  2008 cty            12
 5 dodge        durango 4wd         3.90  1999 hwy            17
 6 dodge        ram 1500 pickup 4wd 4.70  2008 hwy            16
 7 ford         f150 pickup 4wd     4.60  2008 cty            13
 8 ford         f150 pickup 4wd     4.60  2008 hwy            17
```