WARM-UPS

Enough chit-chatting, time to code!

PRIMARY DATA TYPES

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Character	Numeric	Dates	Factors	Logical
	• double • integer			

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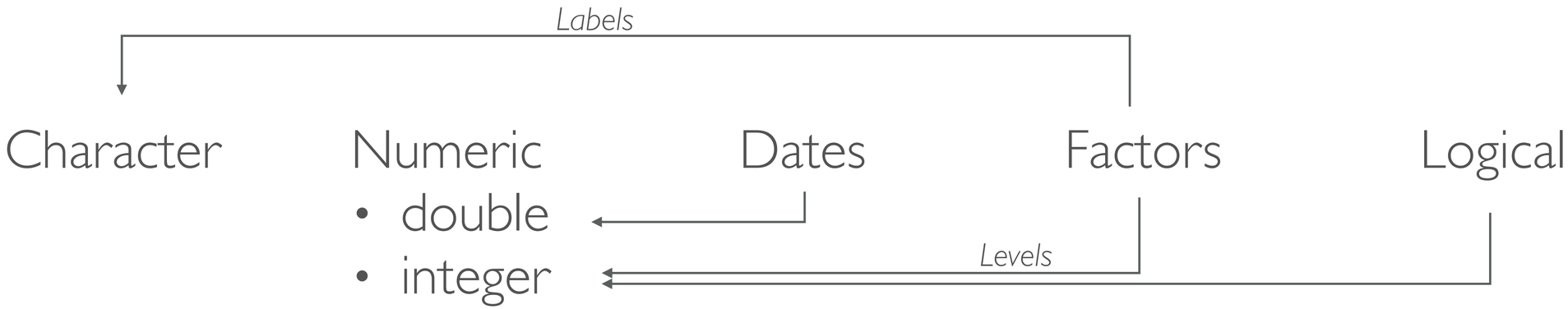

DATA TYPE EXERCISES

Create these vectors:

- `dbl_var <- c(1, 2.5, 4.5, NaN, Inf)`
- `int_var <- c(1L, 6L, 10L, NA)`
- `log_var <- c(TRUE, FALSE, T, F)`
- `chr_var <- c(“these are”, “some strings”)`
- `fct_var <- factor(c("male", "female", "male", "female"))`

Brainstorm with your neighbors all the ways to test for the type of contents in these vectors

SOLUTIONS

```
typeof        -> be careful, what happens when you apply this to a factor?
class         -> be careful, what happens when you apply this to a double?
is.numeric
is.double
is.integer
is.logical
is.character
is.factor

# Bonus
is.na
is.nan
is.infinite
```

Plenty more, just type **`is.`** *+ tab for a full list*

COERCION EXERCISES

Discuss with your neighbor …what happens when you do the following? Use your mind not your computer to answer:

- `typeof(c(int_var, dbl_var))`
- `typeof(c(int_var, log_var))`
- `typeof(c(log_var, chr_var))`
- `typeof(c(chr_var, int_var))`
- `typeof(c(chr_var, fct_var))`

SOLUTIONS

```
> typeof(c(int_var, dbl_var))
[1] “double"

> typeof(c(int_var, log_var))
[1] “integer"

> typeof(c(log_var, chr_var))
[1] “character"

> typeof(c(chr_var, int_var))
[1] “character"

> typeof(c(chr_var, fct_var))
[1] "character"
```

COERCION EXERCISES

Now, how would you make these conversions:

- *convert* `int_var` *to a double*
- *convert* `log_var` *to a character*
- *convert* `fct_var` *to a character*
- *convert* `log_car` *to a factor*

SOLUTIONS

```
as.double(int_var)
as.character(log_var)
as.character(fct_var)
as.factor(log_var)
```

EXERCISES

How would you apply the following function to compute the sum of squares for each list item?

```
sum_of_squares <- function(x) {
      sum(x ^ 2)
}

lst <- list(c(3, 4, 8), c(4, 7, 1))
```

SOLUTIONS

```
library(tidyverse)

sum_of_squares <- function(x) {
    sum(x ^ 2)
}
lst <- list(c(3, 4, 8), c(4, 7, 1))

map_dbl(lst, sum_of_squares)
[1] 89 66
```

EXERCISES

What is the output of the following code?

```
c(25, 10, 15, 12) %>% rank()
```

SOLUTIONS

```
c(25, 10, 15, 12) %>% rank()
[1] 4 1 3 2
```

EXERCISES

`id` *is the primary key in* `df1`*. Examine the data frame* `df2`*. Which variable is the secondary key? How would you join by these keys?*

```
> df1
  id name       phone
1  4 Jane 03566658397
2  5 John 05521214979
3  6  Joe 06334794646
```

```
> df2
customer_id order_id paid
1           4      A10  Yes
2           5      A11  Yes
3           4      A12   No
4           6      A13   No
```

SOLUTIONS

```
> df1
  id name       phone
1  4 Jane 03566658397
2  5 John 05521214979
3  6  Joe 06334794646
```

```
> df2
  customer_id order_id paid
1           4      A10  Yes
2           5      A11  Yes
3           4      A12   No
4           6      A13   No
```

```
df1 %>% left_join(df2, by = c("id" = "customer_id")
```


LET'S GET STARTED!