

An introduction to dates in R

INTERMEDIATE R FOR FINANCE



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What will you learn?

- If statements
- Loops
- Functions
- Finance examples

Today's date

```
today <- Sys.Date()  
today
```

```
"2017-03-14"
```

```
class(today)
```

```
"Date"
```

Date classes

- Date
 - Calendar dates
 - "2017-03-14"
- POSIX - Portable Operating System Interface
 - POSIXct and POSIXlt
 - Date + time + timezone
 - "2017-03-14 10:00:21 EDT"

Creating dates

```
character_date <- "1957-03-04"  
class(character_date)
```

```
"character"
```

```
sp500_birthday <- as.Date(character_date)  
sp500_birthday
```

```
"1957-03-04"
```

```
class(sp500_birthday)
```

```
"Date"
```

Let's practice!

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Date formats and extractor functions

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Date formats

```
# ISO 8601 Standard: year-month-day  
as.Date("2017-01-28")
```

```
"2017-01-28"
```

```
# Alternative form: year/month/day  
as.Date("2017/01/28")
```

```
"2017-01-28"
```

```
# Fails: month/day/year  
as.Date("01/28/2017")
```

```
Error in charToDate(x) :  
  character string is not in  
  a standard unambiguous format
```

```
# Explicitly tell R the format  
as.Date("01/28/2017", format = "%m/%d/%Y")
```

```
"2017-01-28"
```


Date formats

| Format | Description |
|--------|------------------------------|
| %d | Day of the month (01-31) |
| %m | Month (01-12) |
| %y | Year without century (00-99) |
| %Y | Year with century (0-9999) |
| %b | Abbreviated month name |
| %B | Full month name |
| / - , | Common separators |

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Date format example

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|--------|----------------------------|
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```
# Lehman Brothers bankruptcy  
# Complex format - what do we use?  
as.Date("September 15, 2008", format = "___")
```

```
as.Date("September 15, 2008", format = "%B %d, %Y")
```

```
"2008-09-15"
```

Extractor functions

```
dates <- as.Date(c("2017-01-03", "2017-01-04"))  
weekdays(dates)
```

```
"Tuesday" "Wednesday"
```

Let's practice!

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