



STRING MANIPULATION WITH STRINGR

Introducing stringr

stringr

- Powerful but easy to learn
- Built on `stringi`
- Concise and consistent
 - All functions start with `str_`
 - All functions take a vector of strings as the first argument

str_c()

```
> my_toppings  
[1] "green peppers" "olives"      "onions"
```

str_c()

```
> my_toppings  
[1] "green peppers" "olives"          "onions"  
  
> paste(c("", "", "and "), my_toppings, sep = "")  
[1] "green peppers" "olives"          "and onions"
```

str_c()

```
> my_toppings
[1] "green peppers" "olives"          "onions"

> paste(c("", "", "and "), my_toppings, sep = "")
[1] "green peppers" "olives"          "and onions"

> library(stringr)

> str_c(c("", "", "and "), my_toppings)
[1] "green peppers" "olives"          "and onions"
```

str_c()

```
> my_toppings
[1] "green peppers" "olives"          "onions"

> paste(c("", "", "and "), my_toppings, sep = "")
[1] "green peppers" "olives"          "and onions"

> library(stringr)

> str_c(c("", "", "and "), my_toppings)
[1] "green peppers" "olives"          "and onions"
```

str_length(), str_sub()

Babynames

- USA from 1880 to 2014
- You'll use 2014 only

```
> library(babynames)
> head(babynames)
```

	year	sex	name	n	prop
1	1880	F	Mary	7065	0.07238359
2	1880	F	Anna	2604	0.02667896
3	1880	F	Emma	2003	0.02052149
4	1880	F	Elizabeth	1939	0.01986579
5	1880	F	Minnie	1746	0.01788843
6	1880	F	Margaret	1578	0.01616720



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Let's practice!



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Hunting for matches

stringr functions that look for matches

- All take a pattern argument
 - `str_detect()`
 - `str_subset()`
 - `str_count()`

Finding matches

```
> pizzas <- c("cheese", "pepperoni", "sausage and green peppers")

> str_detect(string = pizzas, pattern = "pepper")
[1] FALSE TRUE TRUE

> str_detect(string = pizzas, pattern = fixed("pepper"))
[1] FALSE TRUE TRUE

> str_subset(string = pizzas, pattern = fixed("pepper"))
[1] "pepperoni" "sausage and green peppers"

> str_count(string = pizzas, pattern = fixed("pepper"))
[1] 0 1 1
```



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Splitting strings

str_split()

"Tom & Jerry" **& not of interest**

```
> str_split(string = "Tom & Jerry", pattern = " & ")
[[1]]
[1] "Tom"    "Jerry"

> str_split("Alvin & Simon & Theodore", pattern = " & ")
[[1]]
[1] "Alvin"    "Simon"    "Theodore"

> str_split("Alvin & Simon & Theodore", pattern = " & ", n = 2)
[[1]]
[1] "Alvin"          "Simon & Theodore"
```

str_split() returns a list

```
> chars <- c("Tom & Jerry",  
             "Alvin & Simon & Theodore")
```

```
> str_split(chars, pattern = " & ")
```

```
[[1]]
```

```
[1] "Tom"    "Jerry"
```

```
[[2]]
```

```
[1] "Alvin"    "Simon"    "Theodore"
```

str_split() can return a matrix

```
> chars <- c("Tom & Jerry",  
             "Alvin & Simon & Theodore")  
  
> str_split(chars, pattern = "&", simplify = TRUE)  
      [,1]      [,2]      [,3]  
[1,] "Tom"     "Jerry"    ""  
[2,] "Alvin"    "Simon"    "Theodore"
```


Combining with `lapply()`

```
> chars <- c("Tom & Jerry",  
             "Alvin & Simon & Theodore")  
  
> split_chars <- str_split(chars, pattern = " & ")  
> split_chars  
[[1]]  
[1] "Tom"    "Jerry"  
  
[[2]]  
[1] "Alvin"    "Simon"    "Theodore"  
  
> lapply(split_chars, length)  
[[1]]  
[1] 2  
  
[[2]]  
[1] 3
```



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Replacing matches in strings

str_replace()

```
> str_replace("Tom & Jerry",  
              pattern = "&",  
              replacement = "and")  
[1] "Tom and Jerry"  
  
> str_replace("Alvin & Simon & Theodore",  
              pattern = "&",  
              replacement = "and")  
[1] "Alvin and Simon & Theodore"  
  
> str_replace_all("Alvin & Simon & Theodore",  
                  pattern = "&",  
                  replacement = "and")  
[1] "Alvin and Simon and Theodore"
```

str_replace() with vectors

```
> chars <- c("Tom & Jerry",  
             "Alvin & Simon & Theodore")  
  
> str_replace_all(chars,  
                  pattern = "&",  
                  replacement = "and")  
[1] "Tom and Jerry"  
[2] "Alvin and Simon and Theodore"
```



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