

Homework Programming 1

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1 Strings

1.1 Exercise on strings

(1) Store the first sentences of *The Hobbit* into a string:

In a hole in the ground there lived a hobbit. Not a nasty, dirty, wet hole, filled with the ends of worms and an oozy smell, nor yet a dry, bare, sandy hole with nothing in it to sit down on or to eat: it was a hobbit-hole, and that means comfort.”

```
library('tidyverse')

-- Attaching packages ----- tidyverse 1.3.1 --

v ggplot2 3.3.5      v purrr  0.3.4
v tibble  3.1.5      v dplyr  1.0.7
v tidyr   1.1.4      v stringr 1.4.0
v readr   2.0.2      v forcats 0.5.1
```



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```
hobbit <- 'In a hole in the ground there lived a hobbit. Not a nasty, dirty, wet hole,
```

(2) How many characters does it have? How many words? (use `str_count`)

```
str_length(hobbit)
```

```
[1] 247
```

```
str_count(hobbit, ' ')
```

```
[1] 51
```

(3) Split the string into words and put the words between positions 11 and 16 into a vector; use the `str_split` command

```
(hole <- str_split(hobbit, pattern = ' ')[[1]][11:16])
```

```
[1] "Not"      "a"        "nasty," "dirty," "wet"     "hole,"
```

(4) With that new vector, find out which of the words contain the letter 'e' by using the command `str_detect`

```
str_detect(hole, 'e')
```

```
[1] FALSE FALSE FALSE FALSE  TRUE  TRUE
```

(5) Repeat the operation in (3) but using the `word` command, which returns a string of words instead of individual words

```
(substring <- word(hobbit, start = 11, end = 16))
```

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```
str_replace(str_replace(str_replace(substring,
                                  'nasty',
                                  'gruesome'
                                  ),
            'dirty',
            'filthy'
            ),
          'wet',
          'swamped'
          )
```

```
[1] "Not a gruesome, filthy, swamped hole,"
```

1.2 Solved exercise on strings

- (1) Store the first two lines of this poem by Keats into a string:

Season of mists and mellow fruitfulness, Close bosom-friend of the maturing sun;

```
library('tidyverse')
keats <- 'Season of mists and mellow fruitfulness,
Close bosom-friend of the maturing sun'
```

- (2) How many characters does it have?

```
str_length(keats)
```

```
[1] 79
```

- (3) Split the poem into words by using `str_split` and access the content with double square brackets. Take the third word.

```
str_split(keats, pattern=' ')[[1]][3]
```



Cartagena99

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```
(some_words <- word(keats, start=3, end=5))
```

```
[1] "mists and mellow"
```

- (5) Use `str_sub` with the options `start` and `end` to substitute “mist” by “grueling homework”. Print the new poem with `writeLines`.

```
str_sub(keats, start=11, end=15) <- 'grueling homework'  
writeLines(keats)
```

```
Season of grueling homework and mellow fruitfulness,  
Close bosom-friend of the maturing sun
```

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