# Untitled

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In the editor on the right, write R code to see if TRUE equals FALSE. Likewise, check if -6 * 14 is not equal to 17 - 101. Next up: comparison of character strings. Ask R whether the strings "useR" and "user" are equal. Finally, find out what happens if you compare logicals to numerics: are TRUE and 1 equal?

```
# Comparison of logicals
TRUE == FALSE
```

```
## [1] FALSE
```

```
# Comparison of numerics
-6 * 14 != 17 - 101
```

```
## [1] FALSE
```

```
# Comparison of character strings
"useR" == "user"
```

```
## [1] FALSE
```

```
# Compare a logical with a numeric
TRUE == 1
```

```
## [1] TRUE
```

Write R expressions to check whether:

-6 * 5 + 2 is greater than or equal to -10 + 1. "raining" is less than or equal to "raining dogs". TRUE is greater than FALSE.

```
# Comparison of numerics
-6 * 5 + 2 >= -10 + 1
```

```
## [1] FALSE
```

```
# Comparison of character strings
"raining" <= "raining dogs"
```

```
## [1] TRUE
```

```
# Comparison of logicals
TRUE > FALSE
```

```
## [1] TRUE
```

On which days did the number of LinkedIn profile views exceed 15? When was your LinkedIn profile viewed only 5 times or fewer? When was your LinkedIn profile visited more often than your Facebook profile?

```
# The linkedin and facebook vectors have already been created for you
linkedin <- c(16, 9, 13, 5, 2, 17, 14)
facebook <- c(17, 7, 5, 16, 8, 13, 14)

# The linkedin and facebook vectors have already been created for you
linkedin <- c(16, 9, 13, 5, 2, 17, 14)
facebook <- c(17, 7, 5, 16, 8, 13, 14)
# Popular days
linkedin > 15
```

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

```
# Quiet days
linkedin <= 5
```

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

```
# LinkedIn more popular than Facebook
linkedin > facebook
```

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

When were the views exactly equal to 13? Use the views matrix to return a logical matrix. For which days were the number of views less than or equal to 14? Again, have R return a logical matrix.

```
linkedin <- c(16, 9, 13, 5, 2, 17, 14)
facebook <- c(17, 7, 5, 16, 8, 13, 14)
views <- matrix(c(linkedin, facebook), nrow = 2, byrow = TRUE)
# When does views equal 13?
views == 13
```

```
##       [,1]  [,2]  [,3]  [,4]  [,5]  [,6]  [,7]
## [1,] FALSE FALSE  TRUE FALSE FALSE FALSE FALSE
## [2,] FALSE FALSE FALSE FALSE FALSE  TRUE FALSE
```

```
# When is views less than or equal to 14?
views <= 14
```

```
##       [,1] [,2] [,3]  [,4] [,5]  [,6] [,7]
## [1,] FALSE TRUE TRUE  TRUE TRUE FALSE TRUE
## [2,] FALSE TRUE TRUE FALSE TRUE  TRUE TRUE
```

Is last under 5 or above 10? Is last between 15 and 20, excluding 15 but including 20?

```
# The linkedin and last variable are already defined for you
linkedin <- c(16, 9, 13, 5, 2, 17, 14)
last <- tail(linkedin, 1)
# Is last under 5 or above 10?
last < 5 | last > 10
```

```
## [1] TRUE
```

```
# Is last between 15 (exclusive) and 20 (inclusive)?
last > 15 & last <= 20
```

```
## [1] FALSE
```

When did LinkedIn views exceed 10 and did Facebook views fail to reach 10 for a particular day? Use the linkedin and facebook vectors. When were one or both of your LinkedIn and Facebook profiles visited at least 12 times? When is the views matrix equal to a number between 11 and 14, excluding 11 and including 14?

```
# The social data (linkedin, facebook, views) has been created for you
# linkedin exceeds 10 but facebook below 10
linkedin > 10 & facebook < 10
```

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

```
# When were one or both visited at least 12 times?
linkedin >= 12 | facebook >= 12
```

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

```
# When is views between 11 (exclusive) and 14 (inclusive)?
views > 11 & views <= 14
```

```
##       [,1]  [,2]  [,3]  [,4]  [,5]  [,6] [,7]
## [1,] FALSE FALSE  TRUE FALSE FALSE FALSE TRUE
## [2,] FALSE FALSE FALSE FALSE FALSE  TRUE TRUE
```

Select the entire second column, named day2, from the li_df data frame as a vector and assign it to second. Use second to create a logical vector, that contains TRUE if the corresponding number of views is strictly greater than 25 or strictly lower than 5 and FALSE otherwise. Store this logical vector as extremes. Use sum() on the extremes vector to calculate the number of TRUEs in extremes (i.e. to calculate the number of employees that are either very popular or very low-profile). Simply print this number to the console.

```
# Constructing the li_df data frame
employee_1 <- c(2, 3, 3, 6, 4, 2, 0)
employee_2 <- c(19, 23, 18, 22, 23, 29, 25)
employee_3 <- c(24, 18, 15, 19, 18, 22, 17)
employee_4 <- c(22, 18, 27, 26, 19, 21, 25)
employee_5 <- c(25, 25, 26, 31, 24, 36, 37)
employee_6 <- c(22, 20, 29, 26, 23, 22, 29)
employee_7 <- c(0, 4, 2, 2, 3, 4, 2)
```

```
employee_8 <- c(12, 3, 15, 7, 1, 15, 11)
employee_9 <- c(19, 22, 22, 19, 25, 24, 23)
employee_10 <- c(23, 12, 19, 25, 18, 22, 22)
employee_11 <- c(29, 27, 23, 25, 29, 30, 17)
employee_12 <- c(13, 13, 20, 17, 12, 22, 20)
employee_13 <- c(7, 17, 9, 5, 11, 9, 9)
employee_14 <- c(26, 27, 28, 36, 29, 31, 30)
employee_15 <- c(7, 6, 4, 11, 5, 5, 15)
employee_16 <- c(32, 35, 31, 35, 24, 25, 36)
employee_17 <- c(7, 17, 9, 12, 13, 6, 12)
employee_18 <- c(9, 6, 3, 12, 3, 8, 6)
employee_19 <- c(0, 1, 11, 6, 0, 4, 11)
employee_20 <- c(9, 12, 6, 13, 12, 13, 11)
employee_21 <- c(6, 15, 15, 10, 9, 7, 18)
employee_22 <- c(17, 17, 12, 4, 14, 17, 7)
employee_23 <- c(1, 12, 8, 2, 4, 4, 11)
employee_24 <- c(5, 8, 0, 1, 6, 3, 1)
employee_25 <- c(2, 7, 5, 3, 1, 5, 5)
employee_26 <- c(29, 25, 32, 28, 28, 27, 27)
employee_27 <- c(17, 15, 17, 23, 23, 17, 22)
employee_28 <- c(26, 32, 33, 30, 33, 28, 26)
employee_29 <- c(27, 29, 24, 29, 26, 31, 28)
employee_30 <- c(4, 1, 1, 2, 1, 7, 4)
employee_31 <- c(22, 22, 17, 20, 14, 19, 13)
employee_32 <- c(9, 11, 7, 10, 8, 15, 5)
employee_33 <- c(6, 5, 12, 5, 17, 17, 4)
employee_34 <- c(18, 17, 12, 22, 22, 13, 12)
employee_35 <- c(2, 12, 13, 7, 10, 6, 2)
employee_36 <- c(32, 26, 20, 23, 24, 25, 21)
employee_37 <- c(5, 13, 12, 11, 6, 5, 10)
employee_38 <- c(6, 10, 11, 6, 6, 2, 5)
employee_39 <- c(30, 37, 32, 35, 37, 41, 42)
employee_40 <- c(34, 33, 32, 35, 33, 27, 35)
employee_41 <- c(15, 19, 21, 18, 22, 26, 22)
employee_42 <- c(28, 29, 30, 19, 21, 19, 26)
employee_43 <- c(6, 8, 6, 7, 17, 11, 14)
employee_44 <- c(17, 22, 27, 24, 18, 28, 24)
employee_45 <- c(6, 10, 17, 18, 13, 10, 7)
employee_46 <- c(18, 19, 22, 17, 21, 15, 23)
employee_47 <- c(21, 27, 28, 28, 26, 17, 25)
employee_48 <- c(10, 18, 20, 18, 12, 19, 17)
employee_49 <- c(6, 15, 15, 15, 10, 14, 2)
employee_50 <- c(30, 28, 29, 31, 24, 20, 25)
li_df <- c(employee_1, employee_2, employee_3, employee_4,employee_5,employee_6, employee_7, employee_8

li_df <- matrix(li_df, nrow = 50, byrow = TRUE)
colnames(li_df) <- c("day1", "day2", "day3", "day4", "day5", "day6", "day7")
li_df <- data.frame(li_df)


# Select the second column, named day2, from li_df: second
second <- li_df[, 2]
# Build a logical vector, TRUE if value in second is extreme: extremes
```

```
extremes <- second > 25 | second < 5
# Count the number of TRUEs in extremes
sum(extremes)
```

```
## [1] 16
```

```
# Solve it with a one-liner
sum(li_df[, 2] > 25 | li_df[, 2] < 5)
```

```
## [1] 16
```

Examine the if statement that prints out "Showing LinkedIn information" if the medium variable equals "LinkedIn". Code an if statement that prints "You are popular!" to the console if the num_views variable exceeds 15.

```
# Variables related to your last day of recordings
medium <- "LinkedIn"
num_views <- 14

# Examine the if statement for medium
if (medium == "LinkedIn") {
  print("Showing LinkedIn information")
}
```

```
## [1] "Showing LinkedIn information"
```

```
# Write the if statement for num_views
if (num_views > 15) {
  print("You're popular!")
}
```

*Add an else statement to both control structures, such that:*

- *"Unknown medium" gets printed out to the console when the if-condition on* `medium` *does not hold.*
- *R prints out "Try to be more visible!" when the if-condition on* `num_views` *is not met.*

```
# Variables related to your last day of recordings
medium <- "LinkedIn"
num_views <- 14
# Control structure for medium
if (medium == "LinkedIn") {
  print("Showing LinkedIn information")
} else {
  print("Unknown medium")
}
```

```
## [1] "Showing LinkedIn information"
```

```
# Control structure for num_views
if (num_views > 15) {
  print("You're popular!")
} else {
  print("Try to be more visible!")
}
```

```
## [1] "Try to be more visible!"
```

"Your number of views is average" is printed if num_views is between 15 (inclusive) and 10 (exclusive). Feel free to change the variables medium and num_views to see how the control structure respond. In both cases, the existing code should be extended in the else if statement. No existing code should be modified.

```
# Variables related to your last day of recordings
medium <- "LinkedIn"
num_views <- 14
# Control structure for medium
if (medium == "LinkedIn") {
  print("Showing LinkedIn information")
} else if (medium == "Facebook") {
  # Add code to print correct string when condition is TRUE
  print("Showing Facebook information")
} else {
  print("Unknown medium")
}
```

```
## [1] "Showing LinkedIn information"
```

```
# Control structure for num_views
if (num_views > 15) {
  print("You're popular!")
} else if (num_views <= 15 & num_views > 10) {
  # Add code to print correct string when condition is TRUE
  print("Your number of views is average")
} else {
  print("Try to be more visible!")
}
```

```
## [1] "Your number of views is average"
```

If both li and fb are 15 or higher, set sms equal to double the sum of li and fb. If both li and fb are strictly below 10, set sms equal to half the sum of li and fb. In all other cases, set sms equal to li + fb. Finally, print the resulting sms variable.

```
# Variables related to your last day of recordings
li <- 15
fb <- 9
# Code the control-flow construct
if (li >= 15 & fb >= 15) {
  sms <- 2 * (li + fb)
} else if (li < 10 & fb < 10) {
```

```
  sms <- 0.5 * (li + fb)
} else {
  sms <- li + fb
}
# Print the resulting sms to the console
sms
```

```
## [1] 24
```