

Relational Operators

INTERMEDIATE R



Filip Schouwenaars
DataCamp Instructor

Equality ==

```
TRUE == TRUE
```

```
TRUE
```

```
TRUE == FALSE
```

```
FALSE
```

```
"hello" == "goodbye"
```

```
FALSE
```

```
3 == 2
```

```
FALSE
```

Inequality !=

`TRUE != TRUE`

`FALSE`

`TRUE != FALSE`

`TRUE`

`"hello" != "goodbye"`

`TRUE`

`3 != 2`

`TRUE`

< and >

```
3 < 5
```

```
TRUE
```

```
3 > 5
```

```
FALSE
```

```
#Alphabetical Order!  
"Hello" > "Goodbye"
```

```
TRUE
```

```
#TRUE coerces to 1  
#FALSE coerces to 0  
TRUE < FALSE
```

```
FALSE
```

<= and >=

```
5 >= 3
```

```
TRUE
```

```
3 >= 3
```

```
TRUE
```

Relational Operators & Vectors

```
linkedin <- c(16, 9, 13, 5, 2, 17, 14)  
linkedin
```

```
16  9 13  5  2 17 14
```

```
linkedin > 10
```

```
TRUE FALSE  TRUE FALSE FALSE  TRUE  TRUE
```

Relational Operators & Vectors

```
facebook <- c(17, 7, 5, 16, 8, 13, 14)  
facebook
```

```
17 7 5 16 8 13 14
```

```
facebook <= linkedin
```

```
FALSE TRUE TRUE FALSE FALSE TRUE TRUE
```

Let's practice!
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Logical Operators

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Logical Operators

- AND operator &
- OR operator |
- NOT operator !

AND operator "&"

TRUE & TRUE

TRUE

FALSE & TRUE

FALSE

TRUE & FALSE

FALSE

FALSE & FALSE

FALSE

AND operator "&"

```
x <- 12  
x > 5 & x < 15
```

TRUE

```
x <- 17  
x > 5 & x < 15
```

FALSE

OR operator "|"

TRUE | TRUE

TRUE

TRUE | FALSE

TRUE

FALSE | TRUE

TRUE

FALSE | FALSE

FALSE

OR operator "|"

```
y <- 4  
y < 5 | y > 15
```

TRUE

```
y <- 14  
y < 5 | y > 15
```

FALSE

NOT operator "!"

!TRUE

FALSE

!FALSE

TRUE

!(x < 5)

x >= 5

NOT operator "!"

```
is.numeric(5)
```

TRUE

```
!is.numeric(5)
```

FALSE

```
is.numeric("hello")
```

FALSE

```
!is.numeric("hello")
```

TRUE

Logical Operators & Vectors

```
c(TRUE, TRUE, FALSE) & c(TRUE, FALSE, FALSE)
```

```
TRUE FALSE FALSE
```

```
c(TRUE, TRUE, FALSE) | c(TRUE, FALSE, FALSE)
```

```
TRUE TRUE FALSE
```

```
!c(TRUE, TRUE, FALSE)
```

```
FALSE FALSE TRUE
```

"&" vs "&&", "|" vs "||"

```
c(TRUE, TRUE, FALSE) & c(TRUE, FALSE, FALSE)
```

```
TRUE FALSE FALSE
```

```
c(TRUE, TRUE, FALSE) && c(TRUE, FALSE, FALSE)
```

```
TRUE
```

"&" vs "&&", "|" vs "||"

```
c(TRUE, TRUE, FALSE) | c(TRUE, FALSE, FALSE)
```

```
TRUE TRUE FALSE
```

```
c(TRUE, TRUE, FALSE) || c(TRUE, FALSE, FALSE)
```

```
TRUE
```

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Conditional Statements

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if statement

```
if(condition) {  
  expr  
}
```

```
x <- -3
```

```
if(x < 0) {  
  print("x is a negative number")  
}
```

```
"x is a negative number"
```

if statement

```
if(condition) {  
  expr  
}
```

```
x <- 5
```

```
if(x < 0) {  
  print("x is a negative number")  
}
```

```
#No printout
```

else statement

```
if(condition) {  
  expr1  
} else {  
  expr2  
}
```

```
x <- -3
```

```
if(x < 0) {  
  print("x is a negative number")  
} else {  
  print("x is either a positive number or zero")  
}
```

```
"x is a negative number"
```


else statement

```
if(condition) {  
  expr1  
} else {  
  expr2  
}
```

```
x <- 5  
if(x < 0) {  
  print("x is a negative number")  
} else {  
  print("x is either a positive number or zero")  
}
```

```
"x is either a positive number or zero"
```

else if statement

```
if(condition1) {  
  expr1  
} else if(condition2) {  
  expr2  
} else {  
  expr3  
}
```

else if statement

```
x <- -3
```

```
if(x < 0) {  
  print("x is a negative number")  
} else if(x == 0) {  
  print("x is zero")  
} else {  
  print("x is a positive number")  
}
```

```
"x is a negative number"
```

else if statement

```
x <- 0
```

```
if(x < 0) {  
  print("x is a negative number")  
} else if(x == 0) {  
  print("x is zero")  
} else {  
  print("x is a positive number")  
}
```

```
"x is a zero"
```

else if statement

```
x <- 5
```

```
if(x < 0) {  
  print("x is a negative number")  
} else if(x == 0) {  
  print("x is zero")  
} else {  
  print("x is a positive number")  
}
```

```
"x is a positive number"
```

if, else if, else

```
x <- 6
```

```
if(x %% 2 == 0) {  
  print("divisible by 2")  
} else if(x %% 3 == 0) {  
  print("divisible by 3")  
} else {  
  print("not divisible by 2 nor by 3...")  
}
```

```
"divisible by 2"
```

Let's practice!
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