R for Data Scientists

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Operators

- Assignment

- Arithmetic

- Relational

- Logical

- Miscellaneous

- Element wise operators

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Assignment Operators

- Assigns value to a variable

- Left assignment

    - <-

    - =

    - <<-

- Right assignment

    - ->

    - ->>

Arithmetic Operators

- + Addition of two vectors

- - Subtraction

- * Multiplication

- / Division

- %% Remainder of division

- %/% Quotient of division

- ^ and ** Exponentiation

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Relational Operators

- Each element of first vector is compared with the corresponding element of the second vector

  - Element wise

- Result is Boolean

- \> greater than

- \< less than

- == equal to

- \>= greater than equal to

- \<= less than equal to

- != not equal to

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Logical Operators

- Applicable to the vectors of logical, numeric and complex data types

- All non zero values are TRUE

- Element wise operators

  – & AND (TRUE if corresponding elements are TRUE, otherwise FALSE)

  – | OR (FALSE if corresponding elements are FALSE, otherwise TRUE)

  – ! NOT (Gives opposite of a given element)

- Comparison of only first elements

  – && AND (TRUE if both first elements are TRUE, otherwise FALSE)

  – || OR (FALSE if both first elements are FALSE, otherwise TRUE)

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Truth Tables

- Short circuiting

&, && (AND)		
x	y	result
F	F	F
F	T	F
T	F	F
T	T	T

|, || (OR)		
x	y	result
F	F	F
F	T	T
T	F	T
T	T	T

! (NOT)	
x	result
F	T
T	F

!= (Not equal to)		
x	y	result
F	F	F
F	T	T
T	F	T
T	T	F

A **Boolean expression** is an expression that is either true or false

Miscellaneous Operators

- : creates series of numbers in sequence

- %in% checks if an element is in the vector

- %*% matrix multiplication