Lab 2

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# Basic Data Types

## Here are some basic data types in R

* Character
* Factor
* Numeric
* Integer
* Logical
* Complex

## We will focus on the use of the first five types

# Character - 1

## A character object is used to store text, letters, or words (strings) in R

x<-"Hello"  
y<-"UD Students!"  
class(x) # class() function obtains the data type

## [1] "character"

class(y)

## [1] "character"

nchar(x) # use nchar() to count the number of characters

## [1] 5

# Character - 2  
  
## If we want to combine two strings into one string, we can use paste() or paster()() function  
  
paste(x,y)

## [1] "Hello UD Students!"

paste(x,y,sep=",") # separates with ','

## [1] "Hello,UD Students!"

paste(x,y,sep=", ") # separates with ', '

## [1] "Hello, UD Students!"

paste(x, ", ", y) #same output with ', '

## [1] "Hello , UD Students!"

paste0(x,y) #sep = N/A

## [1] "HelloUD Students!"

paste(x,y,sep="")

## [1] "HelloUD Students!"

# Character - 3  
## Here we give one advanced example  
  
allfiles1 <- paste("file\_", 1:5)  
allfiles2 <- paste("file\_", 1:5,collapse = "\*") #collapse turns set of strings into single string  
allfiles3 <- paste("file", 1:5, sep = "\_")  
  
allfiles1

## [1] "file\_ 1" "file\_ 2" "file\_ 3" "file\_ 4" "file\_ 5"

allfiles2

## [1] "file\_ 1\*file\_ 2\*file\_ 3\*file\_ 4\*file\_ 5"

allfiles3

## [1] "file\_1" "file\_2" "file\_3" "file\_4" "file\_5"

x<-NA\_character\_ #empty character  
class(x)

## [1] "character"

# Factor Object (stores categorical / qualitative variables)  
  
grade <- factor(c("A","C","B","B-","A","C+","D","A-","B+","C-"))  
gender <- c("M","F","F","M","M","M","F","M","F")  
gender <- as.factor(gender)