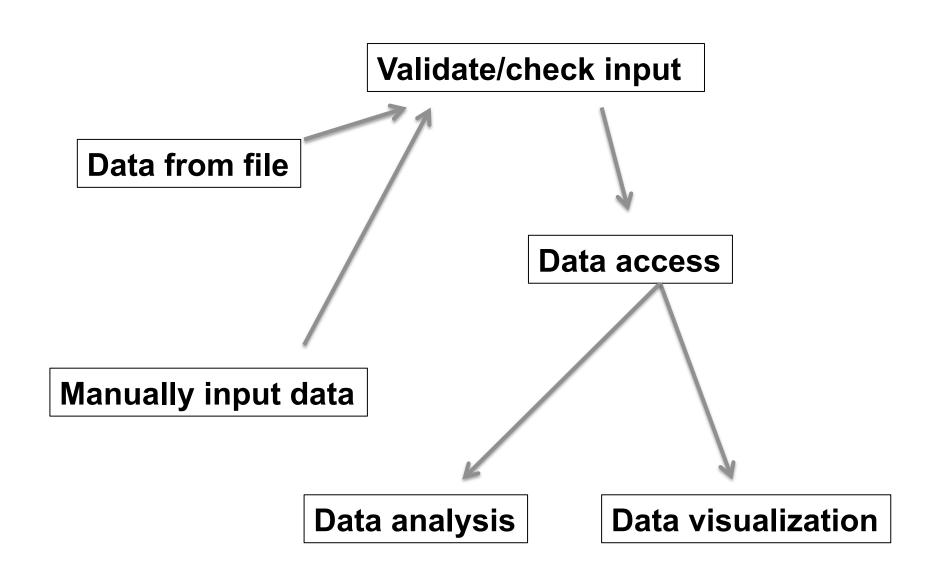
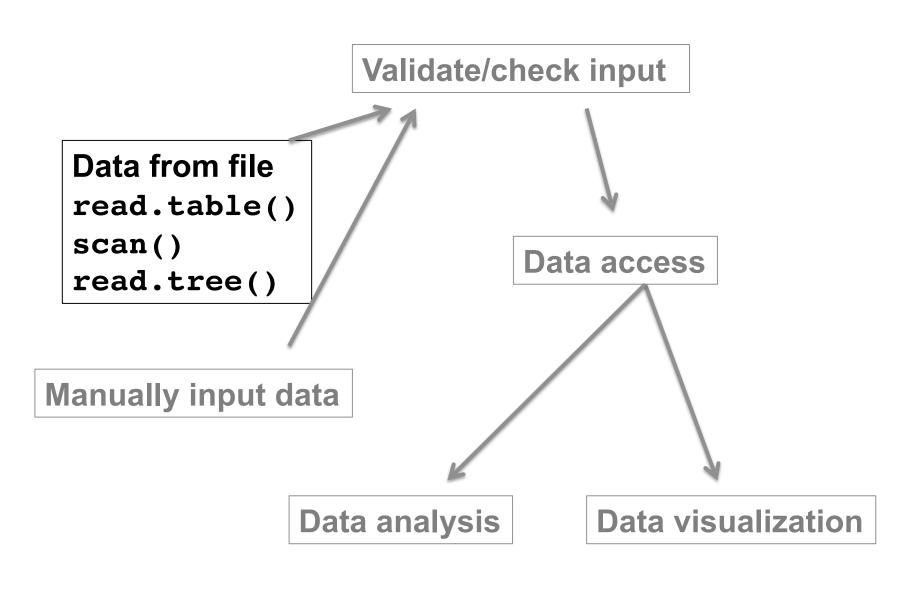
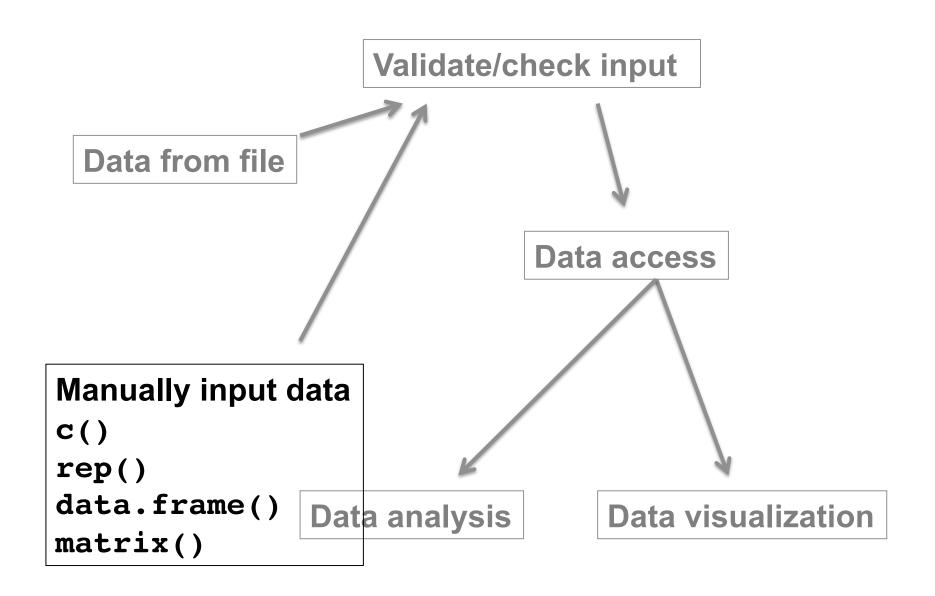
## Scientific programming in

Data from file

Manually input data







**Data from file** 

**Manually input data** 

## Validate/check input

length()

dim()

head()

rownames()

colnames()

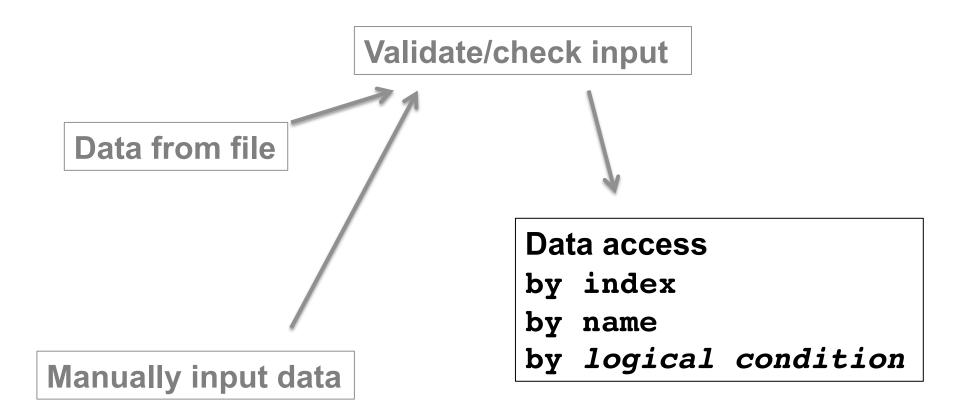
names()

class()

mode()

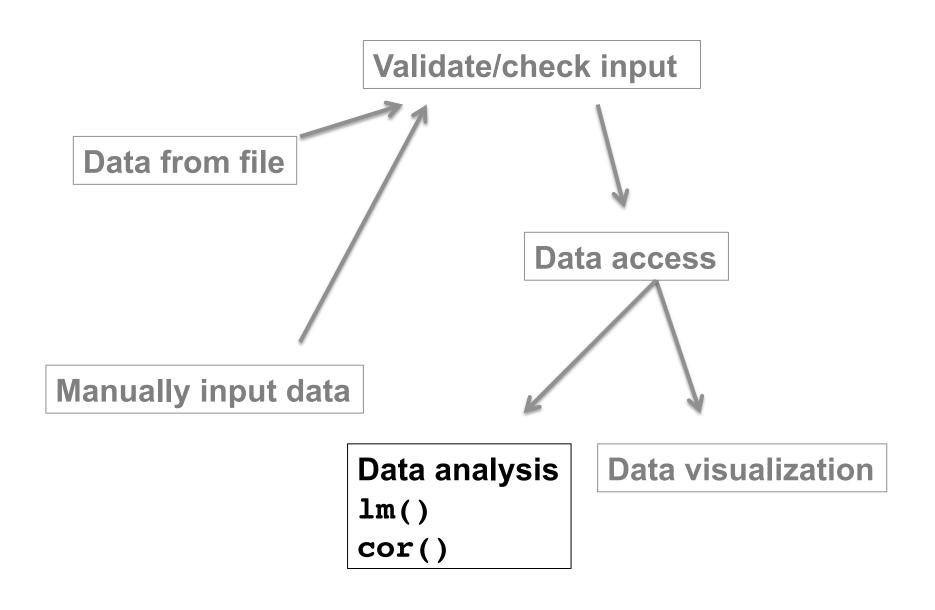
**Data analysis** 

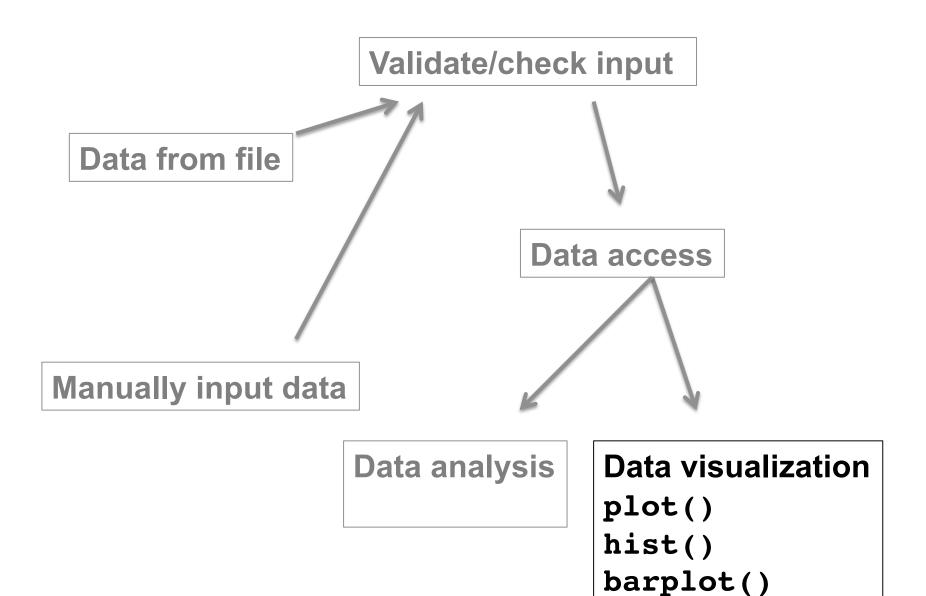
**Data visualization** 



**Data analysis** 

**Data visualization** 





Working with vectors, dataframes, and matrices