LEFT

RIGHT

### Load data and package

# load dplyr  
library("dplyr")  
  
# load information about students and teachers  
student = read.csv("student.csv")  
teacher = read.csv("teacher.csv")

### Filter Rows

# Filter individual row  
filter(student, teacherID == "T1" & year2score < 80)   
  
# Filter groups  
student %>% group\_by(teacherID) %>% filter(mean(year1score) > 65)

### Select columns

# Select columns  
select(student, studentID, birthDay)  
  
# Exclude columns  
select(student, -studentID, -birthDay)

### Sort rows

# Small to large  
arrange(student, year1score)  
  
# Large to small  
arrange(student, desc(year1score))

### Group rows

# Grouping  
student %>% group\_by(teacherID)   
  
# Ungrouping  
student %>% ungroup()

### Summarise by group

student %>% group\_by(teacherID) %>%   
 summarise(mean\_score1 = mean(year1score),  
 mean\_score2 = mean(year2score))

### Add or edit column

# Add new column  
student %>%   
 mutate(mean\_score = (year1score + year2score)/2)  
   
# Edit existing column  
student %>%   
 mutate(year1score = scale(year1score))

### Identify Unique rows

# unique values of all columns  
student %>% distinct()  
  
# unique values of teacherID  
student %>% distinct(teacherID)

### Sample Rows

# sample 10 rows  
sample\_n(student, 10)  
  
# sample 30% of the rows  
sample\_frac(student, 0.3)