Window function: used in conjunction with **mutate** and **filter** functions

* ranking and ordering functions

*df <- data.frame(num = c(1, 1, 7, 5))*

* + *mutate(df, rank =* ***row\_number****(num))*

num rank

1 1 1

2 1 2

3 7 4

4 5 3

* + *mutate(df, rank =* ***min\_rank****(num))*

num rank

1 1 1

2 1 1

3 7 4

4 5 3

* + *mutate(df, rank =* ***dense\_rank****(num))*

num rank

1 1 1

2 1 1

3 7 3

4 5 2

* + *mutate(df, rank =* ***percent\_rank****(num))*

num rank

1 1 0.0000000

2 1 0.0000000

3 7 1.0000000

4 5 0.6666667

* + *mutate(df, rank =* ***cume\_dist****(num)):*

# Proportion of all values less than or equal to the current rank

num rank

1 1 0.50

2 1 0.50

3 7 1.00

4 5 0.75

* + *mutate(df, rank =* ***ntile****(num, 2))*

num rank

1 1 1

2 1 1

3 7 2

4 5 2

* + - *filter(players, G > mean(G))* is same as *filter(players, ntile(G, 2) == 2)*. Similary, *ntile(x, 4) > 3* is same as *x > quantile(x, 75)*
* ***lead****(y, order\_by = x)* and ***lag****(y, order\_by = x)*: access the previous and next values in a vector, making it easy to compute differences and trends
* **cumsum**(), **cummin**(), **cummax**(), **cumall**(), **cumany**(), **cummean**()
  + ***order\_by****(x, cumsum(y)):* calculate the cumulative sum of y according to the order of x