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(7)

3. Here, I am taking data set of Titanic ship that contains historical records of all passengers who on-boarded the Titanic.

Data set contains following variables:-

- Passenger Id : Serial no.
- Survived : 0 - dead & 1 - survived.
- P class - Ticket class - 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup>
- Name - Name of passenger.
- Sex - M / F
- Ticket - Serial No.
- Cabin - Cabin No.

Analysis :-

- 1) View (Titanic) :- This helps us in familiarising with data set.
- 2) head (Titanic, n) / tail (Titanic, n) :- It arranges first n data either from starting or end. By default value of n is 5.
- 3) names (Titanic) :- This helps us in checking out all the variables in data set.

4.)  $\text{Str}(\text{titanic})$  : This helps in understanding the structure of data set, data type of each attribute & no. of rows & column present in data. (2)

5.) ~~Arrange~~ <sup>Filter</sup>  $\rightarrow$  `mynewdata <- filter(titanic, age > 20)`

#### ④ Descriptive Statistics <sup>my new data</sup>

In order to find descriptive statistics, we use `Summary(titanic)` command :

Passenger Id	Survived	Sex
Min. : 1.0	Min. : 0.0	female : 314
1st Qu. : 223.5	1st Qu. : 0.0	male : 577
Median : 446.0	Median : 0.0	
Mean : 446.0	Mean : 0.38	
3 <sup>rd</sup> Qu. : 668.5	3 <sup>rd</sup> Qu. : 1.0	
Max : 891.0	Max : 1.0	
Age	Fare	
Min. : 10	Min. : 0.0	
1st Qu. : 20.12	1st Qu. : 7.91	
Median : 28.0	Median : 14.51	
Mean : 29.7	Median : 32.56	
3 <sup>rd</sup> Qu. : 38.0	3 <sup>rd</sup> Qu. : 31.0	
Max : 80.0	Max : 512.33	



## Inferential Statistics

(3)

1) Bar graph ÷ `ggplot(titanic, aes(x=survived)) + geom_bar()`

\*) From Bar graph, it can be inferred that only 38.3% of the passengers did survive.

2) Gender Based survival ÷ `ggplot(titanic, aes(x=sex, fill=survived)) + theme_bw() + geom_bar() + labs(y="Passengers No.", title="Survival Rate by Gender")`

\*) From graph, the survival rate amongst the women was significantly higher when compared to men.

3) Histogram (Survival Rate basis age) ÷ `ggplot(titanic, aes(x=Age, fill=survived)) + theme_bw() + geom_histogram(binwidth=5) + labs(y="No. of Passengers", x="Age")`

\*) From graph, we inferred that for age < 10 section in graph, the survival rate is high. & the survival rate is low for age beyond 45.