

**Institute of Systems Science  
National University of Singapore**

**GRADUATE CERTIFICATE  
BUSINESS ANALYTICS PRACTICE**

**Supplementary Workshop Guide**

**Subject: *NICF- Statistics Bootcamp***

## Workshop 1.6

### Background

The below table lists out the U.S. top 15 grossing movies in year 2017. The unit for TopGross is USD 1 million.

*Table 1 :U.S. Top 15 grossing movies in year 2017*

Film	Studio	TopGross	OpenQuarter
The Last Jedi	Disney	620	4
Beauty and the Beast	Disney	504	1
Wonder Woman	Warner	413	2
Jumanji	Sony	405	4
Guardians of the Galaxy	Disney	390	2
Spider-Man	Sony	334	3
It	Warner	328	3
Thor: Ragnarok	Disney	315	4
Despicable Me 3	Universal	265	2
Justice League	Warner	229	4
Logan	Fox	226	1
The Fate of the Furious	Universal	226	2
Coco	Disney	210	4
Dunkirk	Warner	188	3
Get Out	Universal	176	1

## Task

Complete the below tasks:

- a. Create four vectors: Film, Studio, TopGross, OpenQuarter.
- b. Create a dataframe TopMovies; strings should not be encoded as factor.
- c. Encode Studio as factor.
- d. In R, categorical variables are usually represented by factors. Encode 1,2,3,4 in OpenQuarter as factors '1st', '2nd', '3rd', '4th'.
- e. Use R command to find out how many Disney movies were there in the top 15 grossing.
- f. Use R command to find out how many Disney movies were there in the top 10 grossing.
- g. How much Disney has earned from the movies in the top 15 grossing?
- h. How much Disney has earned from the movies in the top 10 grossing?
- i. How much Disney has earned from the movies in the top 5 grossing?
- j. Use R command to find out how many Warner movies were there in the top 15 grossing.
- k. Use R command to find out how many Warner movies were there in the top 10 grossing.
- l. How much Warner has earned from the movies in the top 15 grossing?
- m. How much Warner has earned from the movies in the top 10 grossing?
- n. How much Warner has earned from the movies in the top 5 grossing?
- o. Plot a graph that illustrates the number of movies made by each studio in the top 15 grossing list
- p. Plot a graph that illustrates the number of movies made by each studio in the top 10 grossing list
- q. Plot a graph that illustrates the total revenue each studio has earned from the movies in the top 15 grossing
- r. Plot a graph that illustrates the total revenue each studio has earned from the movies the top 10 grossing
- s. Plot a graph that illustrates the total revenue each studio has earned from the movies in the top 15 grossing (Using ggplot)
- t. Assume you want to know which quarter in a year is the best time to launch a movie. Plot a graph to illustrate the mean revenue received in each quarter (Using ggplot)