**IST687 – HW 1 - Intro Homework**

Make sure to read the instructions in Blackboard for how to format your homework.

**Step A: Create a Vector**

1. Define a vector ‘grades’, which contains the numbers 4.0, 3.3 and 3.7 (i.e., three numbers in the vector ‘grades’).
2. Define a vector ‘courseName’, which contain the strings “Bio”, “Math”, “History”.
3. Define a variable ‘BetterThanB’, that is equal to 3

**Step B: Calculating statistics using R**

1. Compute the average of the grades vector with the mean() function
2. Calculate the number of observations in the grades vector with the length() function, and store the result in the variable ‘total.length’
3. Output the value of ‘total.length’
4. Calculate the sum of ‘grades’ with the sum() function, store the result in ‘total’.
5. Recompute the average of all the grades by combining questions 5 and 7

**Step C: Using the max/min functions in R**

1. Compute the max grades, store the result in ‘maxG’
2. Compute the min grades, store the results in ‘minG’

**Step D: Vector Math**

1. Create a new vector called betterGrades, which is the grades + 0.3 (each grade improved each grade by 0.3 points)
2. Compute the average of betterGrades

**Step E: Using Conditional if statements**

1. Test if maxG is greater than3.5 (output “yes” or “no”)
2. Test if minG is greater than the variable ‘BetterThanB’’ (output “yes” or “no”)

*Hint - Try the following code in R:*

*if ( 100 < 150 ) "100 is less than 150" else "100 is greater than 150"*

**Step F: Accessing an element in a vector**

12) Output the name of the second class, in the 'courseName' vector

Syllabus Highlights

# Contributions to Grade

The work for this class will involve the following:

* **HW** (33%) The 11 HW (each worth 3 points) are designed for you to practice the necessary skills in carrying out data processing, analysis, and management tasks.
* **Quizzes** (6%) A few quizzes, worth a total of 6 points (given in random lectures or labs) to check that you are reading the assigned material.
* **Participation** (10%) includes attendance and participation in-class.
* **Mid-term Test** (25%) is designed to evaluate your mastery of concepts, methods, and tools in data analysis and management.
* **Final project** (26%): For the final mini-project you work on a dataset provided, transform the data as needed, and provide a written analysis with visualizations. This is comprised of:
  + 13% final R-code document submission
  + 13% Word Document describing your results in your own words

# General Requirements for Assignment Submissions

All homework assignments are “.R” files (source code for R) that you will prepare in R-Studio. Assignments must be submitted electronically to Blackboard. No hand-written assignments will be accepted. All R code must be commented according to the standards published by the instructor and shown in Blackboard.

For each assignment, be sure to include the following information:

* Course number (i.e., IST 387)
* Your name
* Name of the assignment (e.g. “Homework 2”)
* Date the assignment is due and date in which it is submitted

***You must submit all assignments to blackboard on the deadline specified for each assignment.*** HW assignments are due prior to the start of the next larger “lecture” class. Late HW assignments will receive a deduction of up to three points.