### Nashville Rock-and-Roll Marathon and Half-Marathon Race Results (2016 - 2019)

1. Create a new blank workbook and load the 8 marathon and half-marathon tables **from marathons.accdb**, a MS Access database called (Data --> Get Data --> From Database --> From Microsoft Access Database).

a. Load each table to a separate worksheet. Give the worksheets \*\_meaningful\_\* names.

b. Be sure to format the Time column after load (HH:MM:SS). If you get any load errors, try to understand whether you can reload the data and correct them.

c. Create another worksheet and name it `analysis`. This is where you should do your analysis work.

2. Use built-in functions to answer the following questions. Be sure to display your analysis work in a neat, easy-to-follow format.

a. Find the fastest time, slowest time, median, and mean times for each of the 8 races.

b. Find the mean and median marathon finish times for all 4 years combined.

c. Find the mean and median half-marathon finish times for all 4 years combined.

3. First time marathoners sometimes set a goal of beating “Oprah’s” time,”Oprah Winfrey’s” time (04:29:20) in the 1994 Marine Corps Marathon when she was 40 years old.

a. How many runners each year beat Oprah’s time? How to use a cell reference containing Oprah’s time within =COUNTIF()

b. What percentage of runners in each of the 4 marathons beat Oprah’s time?

4. Quartiles help group ordered data into buckets - the first quartile separates the lowest 25 percent of the data from the top 75 percent, the second quartile (same as the median) divides the dataset in half, and the third quartile separates the lowest 75 percent from the top 25 percent. Find the values that define the first, second, and third quartiles for each half-marathon.

5. Is there a year in which runners seem slower or faster? Formulate a hypothesis for any apparent differences.

* Need info from Q4
* For just half-marathons or both half-marathons and marathons?
* Use mean times
* ANS: 2017 half and full marathons had the slowest times, maybe bc of weather conditions?
* <https://racecast.io/race/rock-n-roll-nashville-marathon>
* Combo of temp, dew, & wind made conditions less desirable for runners
* Impacts ability for body to self-regulate when sweating
* Amount of O2 in each breathe

6. Scott Wietecha has won the Rock and Roll Marathon for 7 years in a row. Compute and display the difference between Wietecha’s time and the next fastest runner for each year.

#### BONUS: Find the top three marathon runners for 2016, 2017, 2018, and 2019. Remove any duplicates across years (i.e., Scott Wietecha should only be in the list once). How many unique runners finished at one of the top 3 spots in the past 4 races? In how many of the 4 years did each top 3 runner finish? How has each runner’s time changed from year to year?

* Use fastest time from 2016-2019 marathons
* Top 3 finishes list
* Unique list (Scott is only on this list once)

##### Create a brief (5 minute) presentation to communicate your findings from this exercise.