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| **DIRPA Analytics Data Exercise** |
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DIRPA Analytics

Data Exercise

Thank you for your time and interest in the Deloitte Institute for Research and Practice in Analytics (DIRPA) program at the University of Miami!

A standard but important step of the interview process is a take-home exercise designed to challenge your data cleansing, analytics, and communication skills.

# GUIDELINES

Tools

You are welcome to use any tool you are comfortable with, including (but not limited to) VBA, Python, R, and SAS and Excel, Tableau, Qlik Sense, PowerBI for visualization.

Format

Please retain/submit your formulas and/or code and dashboards for review. Also, document your results/narrative in PowerPoint or Word.

Deadline

The exercise is intended to be completed in less than two hours; however, it is okay if you exceed two hours; just indicate how long on your results.

# TIMELINE

Day 1 Approximately one week before the final DIRPA interviews, your Deloitte contact will send you the instructions and data.

Day 2-3: If you have a few questions before beginning the exercise, please send them to your Deloitte contact, [mcarty@deloitte.com](mailto:mcarty@deloitte.com) by Friday, October 6th.

Day 4-7: Return your findings and any associated data files (e.g., python scripts, visualization dashboards) to your recruiter, [mcarty@deloitte.com,](mailto:mcarty@deloitte.com) with Doug Lehmann, [dlehmann@bus.miami.edu](mailto:dlehmann@bus.miami.edu), in the CC line **by Monday, October 9th.** Please use the following subject format in your email: “LastName\_FirstName\_DIRPA\_DataExercise2023”.

Day 8-11: Deloitte DIRPA Representatives will review the submissions and select finalists for interviews. If selected, a Deloitte contact will reach out to schedule an interview.

Day of the Interview: One of your interviewers will discuss your experience with this exercise, how you worked through the exercise questions, and what obstacles you may have encountered.

# EXERCISE QUESTIONS

Using the data provided, create a series of visualizations (e.g., charts, graphs, etc.) that answer the following questions regarding the results of the 2019 Pike’s Peak 10k Race:

1. What are the mean, median, mode, and range of the race results for all racers by gender?
2. Analyze the difference between gun and net time race results.
3. How much time separates Chris Doe from the top 10 percentile of racers of the same division?
4. Compare the race results of each division.

# EXERCISE QUESTIONS

How do you think analytics will impact the way companies do business in the next five years?

# Data Dictionary

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| Field Name | Description |
| Place | The order in which each racer finished relative to racers of the same gender |
| Div/Tot | A division comprises racers of the same gender and age group\* / The total number of racers within the same division |
| Num | Racer’s bib number |
| Name | Name of the racer |
| Ag | Age of the racer |
| Hometown | Hometown of the racer |
| Gun Tim | Elapsed time from the formal start of the race and when the racer crossed the finish line |
| Net Tim | Elapsed time from when the racer crossed the starting line and when the racer crossed the finish line |
| Pace | Racer’s average time per mile during this race |

\* The two youngest age groups are 0-14 and 15-19; the remaining age groups are separated by 10-year increments (e.g. 20-29, 30-39, etc.)