



Mission Analytics

Data Exercise

Thank you for your time and interest in Mission Analytics and the Firm!

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) Excel, VBA, Python, R, and SAS.

Format

Please retain your formulas and/or code for review and document your results 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 your interviews, your recruiter will send you the instructions and data.

Day 2: If you have a few questions before beginning the exercise, please send them to your recruiter.

Day 4: Return your findings and any associated data files (e.g., python scripts) to your recruiter by 4 pm.

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 2006 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.



Data Dictionary

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.)