# DAT 375 Project One Template

# Data Analysis Process Job Aid

### Who should use this job aid?

This job aid is for newly hired data analysts at our consulting firm. This job aid will outline the steps in the data analysis process. It will use the Strom and Crime Data Report (SCDR) for the Miami Police Department. This will help our newly hired data analyst to understand how to define problem, collect relevant data, choose appropriate tools, and prepare for analysis.

### Introduction

It is important to define the problem, determine required data, and select appropriate tools before beginning the data analysis process (Muñoz, 2020). The Miami Police Department suspects a correlation between sever weather events and increase in crime. They have requested the creation of the SCDR to explore the historical data from the city of Miami for 10/01/2019 to 10/31/2019 to see if a relationship exists. Some barriers to consider are data completeness and consistency, especially since we are only examining one month instead of a larger dataset.

### Section 1: Type of analysis

There are two types of data analytics that would be appropriate for this problem. Descriptive analytics is used to find trends in data and describe what is happening (**Harvard Business School Online, 2012**). We would use this type of analytics to analyze the trends in weather and crime. Diagnostic analytics is used to compare trends, find correlations, and determine relationships (**Harvard Business School Online, 2012**). We would use this type of analysis to find correlations between storms and crimes.

### Section 2: Define Parameters and collect data

A parameter is a characteristic that is used to describe a population and is used to describe s characteristic of the population (Taylor). The parameters that we will be using include the time frame, storm data variables, and crime data variables.

### Section 3: Tool Selection

To visualize the results, I have chosen to use Excel because of its ease to import data and organize. Excel has the option to create graphs and charts that will help the Miami Police department visualize the results. It is also a great option to use for the type of analysis that was chosen for this data set.

The chart below uses vertical bars to represent the number of strom events and crime incidents on each day from 10/01/2019 to 10/31/2019. Each pair of bars shows a side by side comparison of storm and crime activity. This allow the Miami Police department to visually compare the frequency of storms and crimes per day.

This line graph plots the storm data and crime data over time. The points are connected to show trends and fluctuations in the values over the month. This line graph is better for showing the overall trends. It shows how when the storm activity increase the crime activity also tends to increase. This line graph is great to use to identify correlations and trends over time.

### Section 4: Validation

The query below was performed to see the data to perform analysis.

A screenshot of a computer

AI-generated content may be incorrect.

This query was used to find the total number of storm entries and the total number of crime entries recorded on the same date. This was used to create the graphs to be able to visualize trends for the Miami police department.

A screenshot of a computer

AI-generated content may be incorrect.

References

**Harvard Business School Online.** (2021, April 26). 4 types of data analytics to improve

decision‑making. Harvard Business School Online Blog. Retrieved July 26, 2025,

from <https://online.hbs.edu/blog/post/types-of-data-analysis>

Muñoz, P. (2020, August 7). Understanding the lifecycle of a data analysis project. Northeastern

University Graduate Knowledge Hub. Retrieved July 26, 2025, from <https://graduate.northeastern.edu/knowledge-hub/data-analysis-project-lifecycle/>

Taylor, S. (n.d.). **Parameter – overview, examples, and uses in statistics**. Corporate Finance

Institute. Retrieved July 26, 2025, from <https://corporatefinanceinstitute.com/resources/data-science/parameter/>