Homework Problem Set J Submission Form

# Overview

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# Instructions

Put your name and SU email at the top. Answer these questions all from the lab. When asked to include screenshots, please follow the screenshot guidelines from the first homework.

Remember as you complete the homework that it is not only about getting it right/correct. We will discuss the answers in class so it’s important to articulate anything you would like to contribute to the discussion in your answer:

* If you feel the question is vague, include any assumptions you've made.
* If you feel the answer requires interpretation or justification, provide it.
* If you do not know the answer to the question, articulate what you tried and how you are stuck.
* Highlight any doubts or questions you would like me to review.

This how you receive credit for answering questions that might not be correct. In addition, you must complete the reflection portion of the homework assignment for full credit. Since most answers will be similar this is an important part of your individual submission.

Complete Part II of this document first, then go back and complete the Reflection in Part I.

# Part I: Reflection

Use this section to reflect on your learning. To achieve the highest grade on the assignment, you must be as descriptive and personal as possible with your reflection.

1. As you completed this assignment, identify what you learned.
2. What barriers or challenges did you encounter while completing this assignment?
3. How prepared were you to complete this assignment? What can you do to be better prepared?
4. Rate your comfort level with this week’s material. Use the rubric provided.

4 ==> I understand this material and can explain it to others.  
3 ==> I understand this material.  
2 ==> I somewhat understand the material but sometimes need guidance from others.  
1 ==> I understand very little of this material and need extra help.

# Part II: Questions

**For each question, include a copy of the code required to complete the question along with a screenshot of the code and a screenshot of the output.**

1. Turn on tweets from the example **J-Elasticsearch** notebook. Search for tweets in the last 5 minutes from the (Windows or Linux) shell with **curl** (do the math yourself—don’t make this calculation automatic).
   1. **curl -X GET "http://elasticsearch:9200/tweets/\_search?pretty=true&q=computer"**
   2. A picture containing text, screenshot, algebra

      Description automatically generated
2. Do the same thing from the Kibana UI for Elasticsearch. What must you do before you can do that and why? Turn off the tweets.
   1. You must create an index before searching
   2. A screenshot of a computer

      Description automatically generated with low confidence
3. Write PySpark to load the 1,600-line weather data set into Elasticsearch under the index `weather` with default index type.

**file\_name = "file:///home/jovyan/datasets/weather/weather.json"**

**weather = spark.read.option("multiline",True).json(file\_name)**

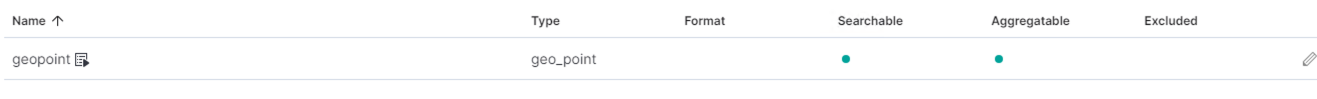
**weather.printSchema()**

**weather.write.mode("Overwrite").format("es").save("weather/doc")**

1. Use a **curl** command from the command line to hit the Elasticsearch API and demonstrate that there are 1,600 documents in the **weather** index.
   1. **! curl -X GET "http://elasticsearch:9200/weather/\_count"  
      A screenshot of a computer

      Description automatically generated with low confidence**
2. Set up a **weather** index pattern in Kibana based on the **weather** index from Elasticsearch. Make sure you have a **geo\_point** based on lat/lon type and have selected a **@timestamp** field using the date field. Provide a screenshot including the fields in question.

**emit(doc["latitude"].value, doc["longitude"].value)**

* 1. 

1. Demonstrate your Kibana index pattern is functional. For the most recent entry, get the weather for a city of your choice. A screenshot of a computer

   Description automatically generated with medium confidence
2. Create a Kibana map displaying the weather locations for the most recent weather data. Use any layer(s) of data you wish. Provide a screenshot of the map with data points on it.  
   A picture containing map, atlas, text

   Description automatically generated
3. Create a Kibana dashboard that, when you select a city, will display the average day time and nighttime temperature for that city, in addition to a line chart of the average daily high and lows for all data on that city. Provide a screenshot of the dashboard in action.
   1. A screenshot of a calendar

      Description automatically generated with low confidence
4. Create a Kibana Canvas! Display at least two metrics and two charts. Decide which data you want to display and how you would like to present it. Provide a screenshot of the Canvas. You can do this for a set of cities or a single city.