## Week 8 Assignment: Diving into Apache Solr

### Objective:

Understand the functionalities of Apache Solr, including the creation of collections, data ingestion, and querying.

#### **1. Environment Initialization**

* Navigate to the Solr directory:

cd solr

* Start the Docker containers:

docker-compose up -d

* Access the Solr container:

docker exec -it solr\_solr\_1 bash

* If you can’t access the Solr container, it could be due to a container name change. In this cause use:

docker exec -it solr-solr-1 bash

#### **2. Creating a Solr Collection**

**Exercise 1:** Create a Solr collection named ‘mynewcollection’.

/opt/solr/bin/solr create -c mynewcollection

**Exercise 2:** Verify that ‘mynewcollection’ has been successfully created.

* Access Solr’s Web Interface at http://localhost:8983/solr/ and check for ‘mynewcollection’ under the “Core Selector” dropdown.

**Deliverable:** Screenshot showing ‘mynewcollection’ in the Solr Web Interface.

#### **3. Generating and Adding Data to the Collection**

For this exercise, create a json file called products.json using this commands:

echo '[

{"id":"1", "name":"Product A", "category":"Electronics", "price":"100"},

{"id":"2", "name":"Product B", "category":"Books", "price":"20"}

]' > /tmp/products.json

**Exercise 3:** Let’s add the generated data to our collection.

/opt/solr/bin/post -c mynewcollection /tmp/products.json

**Deliverable:** Screenshot showing successful data ingestion messages in the terminal.

#### **4. Querying the Collection**

**Exercise 4:** Use Solr’s query interface to retrieve all documents from ‘mynewcollection’.

curl "http://localhost:8983/solr/mynewcollection/select?q=\*:\*"

**Exercise 5:** Query for products in the ‘Electronics’ category.

curl "http://localhost:8983/solr/mynewcollection/select?q=category:Electronics"

**Deliverable:** Screenshots of the JSON response for both queries.

#### **5. Advanced Querying in Solr Web Interface**

Access the Solr Web Interface for querying:

[Query ‘mynewcollection’ in Solr Web Interface](http://localhost:8983/solr/#/mynewcollection/query)

Follow the link, and you’ll be presented with a user-friendly interface to craft and execute your queries. Experiment with different parameters and filters.

**Exercise 6:** Try a faceted search to count the number of products in each category.

**Exercise 7:** Use the Web Interface to experiment further with various query parameters and filters.

**Deliverable:** Screenshots of different queries and their results from the Solr Web Interface.

#### **6. Custom JSON Data**

* Create a new collection in Solr
* Either generate JSON data or use JSON data from the web and add it to your collection.
* Query your collection.

**Deliverable:** Screenshots of different queries on your Solr collection and the query results from either the command line or the Solr Web Interface.

## Shutting Down

Ensure all Docker containers are turned off with docker-compose down for each directory. If you’re using google cloud, please shut down your virtual machine to preserve cloud costs.