Assignment 3

Objective

The primary objective is to process and index a collection of documents using ElasticSearch. Subsequently, a query interface for general searches will be implemented through a Flask web application. While this guide won't provide detailed instructions for ElasticSearch, you're encouraged to consult its official documentation.

Prerequisites

Software Requirements

1. Python 3.x
2. ElasticSearch
3. Flask

Additional Requirements

1. **Download and Installation**: Download and install ElasticSearch from Elastic's Official Website.
2. **Dataset**: Download the dataset available on Canvas for index creation and queries.

Document Indexing

Task

Your task is to develop a backend program for parsing and indexing the provided documents in your ElasticSearch instance.

Approach

- Read and parse the documents.
- Use ElasticSearch's API or SDK to index the parsed documents.

Advanced Techniques

- Implement techniques like Inverted Index for efficient data storage and retrieval.

Query Execution

Task

Create a program that enables general query execution against the ElasticSearch instance.

Approach

- Implement a search functionality within the Flask web application.
- Use ElasticSearch's query language to execute the searches.
- Retrieve and handle the query results.

Advanced Techniques

- Utilize algorithms like PageRank to improve the quality of search results.

User Interface

Task

Develop a user interface using Flask that allows general search queries and displays the search results.

Approach

- Create a Flask web application with a search bar for user queries.
- Interface the Flask application with the ElasticSearch backend to fetch and display search results.

Project Documentation

README

Include a comprehensive README file that outlines:

- Objective
- Prerequisites
- Installation and Usage guides

Ensure explicit instructions for project setup and usage are provided. Do not use absolute paths, and make sure your project is operational to receive marks.

What You Need to Submit

Flask Web Application: Complete source code for the Flask web application, including setup and run instructions.

Submission Method

- Upload your project to Google Drive or OneDrive.
- Submit a public link for downloading. A private link will result in zero marks.

Additional Note

Please apply all learned techniques, including but not limited to PageRank and Inverted Index, to enrich your project's functionality and efficiency. This assignment will provide significant assistance for your final project and can serve as a part of it.

Do not focus on beautifying the user interface as it will not contribute to your grade.