Functional Programming with Scala

Project Title: Data Processing and MongoDB Integration

Group Name: Group 3

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November 19, 2024

About the Project

- **Your Specific Contribution:**
  - Developed a Scala script to clean and preprocess JSON data.
  - Connected the application to MongoDB Atlas using MongoDB drivers.
  - Wrote the cleaned data into a MongoDB Atlas cluster.
- **Methodology or Approach:**
  - Utilized functional programming paradigms in Scala to ensure immutability and modularity.
  - Leveraged JSON4S library for JSON parsing and data transformation.
  - Integrated MongoDB using the MongoDB Java driver for Scala.

Challenges and Learning

- **Challenges Faced and Their Resolutions:**
  - Parsing complex nested JSON structures — Resolved by using JSON4S and understanding recursive parsing techniques.
  - Handling large JSON files exceeding GitHub's size limit — Resolved by removing large files from Git's history and using a '.gitignore' file.
  - Setting up MongoDB Atlas cluster and authentication — Resolved through MongoDB's official documentation and testing connection strings.

- **Learning Gained:**
  - Deepened understanding of Scala functional programming principles.
  - Learned how to integrate external databases like MongoDB with Scala applications.
  - Enhanced debugging skills for handling large datasets and connection issues.

- **Future Improvements:**
  - Use solution to push the result file like Git Large File managment
  - Optimise time management