Functional Programming with Scala

Project Title: FP Project

Group Name: Group 6

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About the Project

- **Your Specific Contribution:**
  - Developed Scala code to load and process JSON files
  - Attempted to integrate MongoDB for data storage

- **Methodology or Approach:**
  - Used Spark SQL to read and process JSON files
  - Implemented data transformation and analysis using Spark DataFrames
  - Attempted to connect to MongoDB Atlas for data persistence

JSON Processing and MongoDB Integration

- **JSON File Processing:**
  - Successfully loaded JSON files using Spark's read.json method
  - Defined custom schema for CVE data extraction
  - Performed data transformation and analysis on the loaded data

- **MongoDB Integration Attempt:**
  - Attempted to connect to MongoDB Atlas
  - Connection failed due to incorrect URI and missing credentials
  - Learned the importance of proper authentication in database connections

- **Challenges Faced and Their Resolutions:**
  - Complex JSON structure handling - Resolved using custom schema definition
  - MongoDB connection issues - Identified need for correct URI and credentials

- **Learning Gained:**
  - Enhanced understanding of Spark SQL and DataFrame operations
  - Importance of proper database connection configuration

- **Future Improvements:**
  - Implement secure credential management for database connections
  - Explore advanced Spark features for more complex data analysis