GINA CODY SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

SOEN 6431

Software Maintenance and Program Comprehension

Case Study Deliverable #3

Group #1

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Brief Summary of Implemented Code:

Our group collaborated on enhancing the OpenTracksConcordia project by implementing features related to real-time weather data retrieval. The collective effort involved creating essential components such as a Service Class for Weather Data retrieval, a Model Class (WeatherInfo.java) to map weather attributes, and extracting functions to fetch specific weather metrics like temperature, wind speed, humidity, and wind direction. The implemented code facilitates seamless communication with a third-party weather data provider through API interactions. The aim is to enrich the OpenTracksConcordia application, allowing users to access and display valuable real-time weather information during their tracked activities. Each group member contributed to specific aspects of the codebase, resulting in a comprehensive enhancement to the application's functionality.

Brief Summary of Case Study #2 Issue:

In Case Study #2, I was assigned to address the integration of weather data into the OpenTracksConcordia project. The specific focus was on creating a Service Class for Weather Data retrieval. My code contributions involved implementing this service class, ensuring seamless communication with a third-party weather data provider. I had to carefully design the class to handle API interactions, including fetching temperature, wind speed, humidity, and wind direction. Parsing the complex JSON responses from the weather API posed a notable challenge. My code aimed to enhance the application's functionality by enabling users to access real-time weather information during their tracked activities, contributing to a more comprehensive and feature-rich OpenTracksConcordia application.

Main Challenges Faced and Lessons Learned:

As an individual contributor to the OpenTracksConcordia project, one of the main challenges I faced was accurately parsing the complex JSON response from the weather API within the Service Class for Weather Data retrieval. This challenge required a meticulous parsing strategy using specific libraries to handle potential variations in the API response.

The lessons learned from this experience include the importance of thorough error handling and testing to ensure the robustness of the data extraction process. Handling complex data structures, such as those in JSON responses, taught me valuable skills in navigating and interpreting external data sources. Additionally, the experience reinforced the significance of adopting adaptable coding practices to accommodate variations in external API responses, contributing to a more resilient and effective implementation.

Suggestions for Course Project Improvement:

Future iterations of this course project could benefit from clearer project documentation and additional guidance on handling specific challenges, such as parsing complex JSON structures. Providing examples of potential challenges and solutions could further assist students in navigating intricate tasks, promoting a more comprehensive understanding of real-world software development scenarios.