Angel Baez

CS-499

Milestone One 2-1

Part 1:

1. **What is code review?**

   Code review is a fundamental practice in software development that involves examining the source code to identify bugs and logical errors. It is an opportunity to enhance the overall quality of the code and foster a better understanding among developers. Additionally, it fosters knowledge sharing within the team, allowing developers to learn from one another.

2. **Why is it an important practice for computer science professionals?**

   For computer science professionals, code review plays a vital role in ensuring software reliability, maintainability, and security. Beyond early code error detection, such as bugs and logic errors within the code, it helps to enforce high standards of code quality in the final product delivered to stakeholders. Having another developer review your code often reveals issues that the original author might have overlooked; it is like the saying, "two heads are better than one.

3. **What are some code review best practices that you read about in the resources that are crucial to include in a code review? Include when a code review should occur in the development process with a rationale as to why?**

   Based on the resources reviewed, several effective practices are essential to a successful code review. First, limit the number of lines to review at a time to between 200 and 400

lines to maintain focus and increase defect detection. Also, avoid reviewing for more than 60 minutes at a time to reduce fatigue. It is important to establish clear goals and use metrics, such as defect rate and review speed, to guide the process. Reviews should focus on identifying errors first and then fixing them afterward, rather than attempting to do both simultaneously. Other best practices include ensuring adherence to coding standards, utilizing checklists to prevent common omissions, and cultivating a positive and respectful review culture that promotes learning over criticism.

Part 2:

4. **What software have you chosen to use to record your code review?**

   For my code review, I selected the Grazioso Salvage dashboard application, a web-based application that interacts with a MongoDB database. This application enables users to visually view and manipulate data, including maps and graphs, without requiring extensive HTML or JavaScript code. It provides an excellent environment to demonstrate how code works with real-time data retrieval and presentation.

5. **Describe your approach to creating an outline or writing a script for your code review for each of the three categories that you will be reviewing based on the rubric as well as the code review checklist?**

   The approach I will take with my code review is structured around three main categories. In this category, I will demonstrate that I understand the purpose and the logic behind each section of the code by explaining the function of each block and its role in the application. Data Structure and Evaluation: In this category, I will examine

the algorithms and data structures used to ensure they are appropriate and efficient, thereby ensuring they fulfill their intended purpose accurately. In this category, I will analyze the MongoDB structure, including its integration with the application, and explain the database schema. Additionally, I will also rely on the checklist to ensure I follow standards such as consistent code formatting and structure, precise and meaningful variable names, proper code comments, defensive programming practices, including input validation, and proper loop termination.

References

OWASP Code Review Guide. (2017, July). Retrieved from https://owasp.org: https://owasp.org/www-project-code-review-guide/

smartbear. (n.d.). *Best Practices for Code Review.* Retrieved from https://smartbear.com: https://smartbear.com/learn/code-review/best-practices-for-peer-code-review/