



CS 320 Project Two Guidelines and Rubric

Competencies

In this project, you will demonstrate your mastery of the following competencies:

- Analyze various approaches to software testing based on requirements
- Apply appropriate testing strategies to meet requirements

Scenario

You are a software engineer for Grand Strand Systems, a software engineering company that focuses on developing and testing back-end services. You recently completed an assignment in which you developed a mobile application for a customer and delivered the contact, task, and appointment services (Project One).

You will now construct a summary and reflections report to be submitted to your supervisor that summarizes your unit testing approach, your experience writing the JUnit tests, and the overall quality of your JUnit tests. This report will also highlight testing techniques and the mindset you adopted while working on this project.

Directions

Summary and Reflections Report

Your supervisor has asked that you submit a follow-up summary and reflections report to explain how you analyzed various approaches to software testing based on requirements and applied appropriate testing strategies to meet requirements while developing the mobile application for the customer. This report should be based on your experience completing Project One. You must complete the following:

1. Summary
 - a. Describe your unit testing approach for each of the three features.
 - i. To what extent was your approach **aligned to the software requirements?** Support your claims with specific evidence.
 - ii. Defend the overall quality of your JUnit tests. In other words, how do you know your JUnit tests were **effective** based on the coverage percentage?
 - b. Describe your experience writing the JUnit tests.
 - i. How did you ensure that your code was **technically sound?** Cite specific lines of code from your tests to illustrate.
 - ii. How did you ensure that your code was **efficient?** Cite specific lines of code from your tests to illustrate.
2. Reflection
 - a. Testing Techniques

- i. What were the software testing techniques that you employed in this project? Describe their characteristics using specific details.
 - ii. What are the **other** software testing techniques that you did not use for this project? Describe their characteristics using specific details.
 - iii. For each of the techniques you discussed, explain the **practical uses and implications** for different software development projects and situations.
- b. Mindset
- i. Assess the mindset that you adopted working on this project. In acting as a software tester, to what extent did you employ **cautious**? Why was it important to appreciate the complexity and interrelationships of the code you were testing? Provide specific examples to illustrate your claims.
 - ii. Assess the ways you tried to **limit bias** in your review of the code. On the software developer side, can you imagine that bias would be a concern if you were responsible for testing your own code? Provide specific examples to illustrate your claims.
 - iii. Finally, evaluate the importance of being **disciplined** in your commitment to quality as a software engineering professional. Why is it important not to cut corners when it comes to writing or testing code? How do you plan to avoid technical debt as a practitioner in the field? Provide specific examples to illustrate your claims.

What to Submit

To complete this project, you must submit the following:

Summary and Reflections Report

Your summary and reflections report should be a 3- to 4-page Word document with 12-point Times New Roman font, double spacing, and one-inch margins. Sources should be cited according to APA style.

Project Two Rubric

Criteria	Exceeds Expectations (100%)	Meets Expectations (85%)	Partially Meets Expectations (55%)	Does Not Meet Expectations (0%)	Value
Summary: Alignment to Requirements	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Defends the alignment of the testing approach to the software requirements with specific examples from the test plan	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification defending the alignment of the testing approach	Does not attempt criterion	8.5

Criteria	Exceeds Expectations (100%)	Meets Expectations (85%)	Partially Meets Expectations (55%)	Does Not Meet Expectations (0%)	Value
Summary: Effective Tests	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Defends the effectiveness of the tests by reflecting on the coverage	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification defending the effectiveness of the tests	Does not attempt criterion	8.5
Summary: Technically Sound Code	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Describes test writing experience, including strategies used to ensure technically sound code, and illustrates each with specific examples from the code	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details, clarification, or illustrations to ensure the code was technically sound	Does not attempt criterion	8.5
Summary: Efficient Code	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Describes test writing experience, including strategies used to make the code efficient, and illustrates each with specific examples from the code	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details, clarification, or illustrations to ensure the code was efficient	Does not attempt criterion	8.5
Reflection: Techniques Employed	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Describes the characteristics of the testing techniques employed in the project and uses specific details	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification describing the characteristics of the testing techniques	Does not attempt criterion	8.5

Criteria	Exceeds Expectations (100%)	Meets Expectations (85%)	Partially Meets Expectations (55%)	Does Not Meet Expectations (0%)	Value
Reflection: Other Techniques	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Describes the characteristics of the other testing techniques and uses specific details	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification describing the characteristics of other testing techniques	Does not attempt criterion	8.5
Reflection: Uses and Implications of Techniques	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Explains the practical uses and implications of each of the techniques and uses specific examples of different software development projects and situations	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification explaining the practical uses and implications of each of the techniques	Does not attempt criterion	8.5
Reflection: Caution	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Assesses the use and importance of employing caution when testing code and uses specific supporting examples	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification assessing the use and importance of employing caution when testing code	Does not attempt criterion	8.5
Reflection: Bias	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Assesses the use and importance of limiting bias when testing code and uses specific supporting examples	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification assessing the use and importance of limiting bias when testing code	Does not attempt criterion	8.5

Criteria	Exceeds Expectations (100%)	Meets Expectations (85%)	Partially Meets Expectations (55%)	Does Not Meet Expectations (0%)	Value
Reflection: Discipline	Exceeds expectations in an exceptionally clear, insightful, sophisticated, or creative manner	Evaluates the importance of being disciplined when developing code and uses specific supporting examples	Shows progress toward meeting expectations, but with errors or omissions; areas for improvement may include additional details or clarification evaluating the importance of being disciplined when developing code	Does not attempt criterion	8.5
Clear Communication	Exceeds expectations with an intentional use of language that promotes a thorough understanding	Consistently and effectively communicates in an organized way to a specific audience	Shows progress toward meeting expectations, but communication is inconsistent or ineffective in a way that negatively impacts understanding	Shows no evidence of consistent, effective, or organized communication	10
Citations and Attributions	Uses citations for ideas requiring attribution, with few or no minor errors	Uses citations for ideas requiring attribution, with consistent minor errors	Uses citations for ideas requiring attribution, with major errors	Does not use citations for ideas requiring attribution	5
			Total:	100%	