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CS 405 Module Five Static Code Analysis Activity Guidelines and Rubric

Overview

You are a senior software developer on a team of software developers who are responsible for a large banking web application. Your manager has recently read an article on the value of static code analysis, but she is not convinced. She asked the team to look at some of the most common coding issues and put them into a single file. She wants you to test a tool she thinks could be very helpful, Cppcheck, by seeing if it can find the errors that the other developers identified.

Prompt

You will learn to do the following:

- Use a static analysis tool to find coding errors
- Apply your understanding of the types of errors that can be found through tooling

Specifically, address the following in a static testing summary:

- **Static Code Analysis**: Complete the static code analysis activity by successfully identifying the issues in the supplied code, comparing the code against the built-in analysis of Visual Studio, providing the XML output from Cppcheck, and providing a screenshot from Visual Studio. Analyze a source code project using a static code analysis to understand the different types of messages, their respective risks, and proposed solutions produced by using static code analysis. Plan to compare the messages produced by Visual Studio and Cppcheck, and learn the limitations and benefits of each.
- **Process Summary**: Provide a thorough and systematic summary of the Cppcheck static code analysis compared against Visual Studio's analysis, and include specific differences between the two. Determine the risk, provide a description of the issue, and explain how to mitigate the code vulnerability. Include information about all of the issues not specifically identified by Cppcheck and Visual Studio. For each issue, identify which tool (Cppcheck or Visual Studio) found the issue.

To complete this assignment, download the Questionable source code file to use as guidance as you move through the activity. You will use your development environment to complete this activity.

What to Submit

Submit the following in a ZIP file: the completed Cppcheck results report as an XML file, a screenshot of the messages from Visual Studio, and the process summary Word document.

Module Five Static Code Analysis Activity Rubric

Criteria	Proficient (100%)	Needs Improvement (75%)	Not Evident (0%)	Value
Static Code Analysis	Completes the static code analysis activity by successfully identifying the issues in the supplied code, comparing it against the built-in analysis of Visual Studio, providing the XML output from Cppcheck, and providing the screenshot from Visual Studio	Completes most of the static code analysis activity, but needs to address one or more of the following: running analysis against the supplied source code, outputting the XML report of the analysis, or providing the screenshot from Visual Studio	Does not attempt criterion	50
Process Summary	Provides a thorough and systematic summary of the static code analysis compared against Visual Studio, including specific differences between the two, determination of risk, a description of the issue, and a description of how to mitigate	Provides a summary of the static code analysis, but the summary lacks detail, the approach is unsystematic, the differences between Visual Studio and Cppcheck are not accurate, details about the documented issues are incorrect or lacking in detail, or the description of how to mitigate is incorrect or lacking in detail	Does not attempt criterion	50
			Total:	100%