Carnegie Mellon University
Software Engineering Institute

Understanding Software Architecture, Quality, and Security through Code Analysis

Why is code analysis important?
Code analysis can increase visibility into the architecture, quality, and security of software. This allows decision makers to ensure that they are producing or acquiring a quality product. Code analysis is also an important tool for building software and systems, providing a window into a developing system's ability to meet stakeholder expectations. For code analysis to be effective, decision makers need to learn how it can be used in their unique acquisition contexts.

About the tutorial
This half-day tutorial provides an introduction to the opportunities and challenges of leveraging code analysis in an acquisition context. The interactive session provides a technical introduction to employing code analysis to understand architectural, security, and quality attributes of software code. It also discusses how the technical insights can inform acquisition decisions and processes.

Audience
This tutorial is designed to benefit Program Managers and other government decision makers who may already be using code analysis or may want to propose its use in an acquisition context. The tutorial has no prerequisites.

Learning objectives
Participants who complete this tutorial can expect to understand:

- Fundamental concepts of static analysis and dynamic analysis.

- The benefits and pitfalls of using code analysis for government acquisitions.

- Tips for understanding software quality using code analysis metrics.

- Typical building blocks required to successfully implement code analysis.

- How code analysis can inform government contracting decisions.

Topics
This tutorial will provide high-level overviews of both the technical and acquisition aspects of the following topics:

- Analyzing software quality through code analysis

- Understanding software security through code analysis

- Acquisition considerations for code analysis

Delivery
This tutorial can be delivered for small groups at your location or delivered virtually as a series of private webinars.