

Clean Code for Embedded

 Duration: 3 Days

 Available Languages: English German

Audience

Software Craftsmen: Embedded Software Developers, Embedded Architects, Project Managers, Scrum Masters.

Precondition

Good knowledge of C.

Goals

Learn how to develop embedded software using the Clean Code principles.

Contents

- Design Smells: Rigidity, Fragility, Immobility, Viscosity
- Core Architecture: Coupling and Cohesion
- The two values of Software
- Fundamentals: Source Code Structure, Naming
- TDD - Test-Driven Development: The Three Laws of TDD, Red-Green-Refactor Cycle, BDD, TPP
- The SOLID Principles: 11 Principles of Clean Architecture
- MISRA C
 - MISRA C:2012
 - Criticism and limitations of MISRA C

NELKINDA SOFTWARE CRAFT



- CMU SEI CERT C Coding Standard
 - Rules vs Recommendations
 - Preprocessor
 - Declarations and Initialization
 - Expressions
 - Integers
 - Floating Point
 - Arrays
 - Characters and Strings
 - Memory Management
 - Input Output
 - Environment
 - Signals
 - Error Handling
 - Application Programming Interfaces
 - Concurrency
 - Miscellaneous
 - POSIX
 - Microsoft Windows
- Stack Measurement
- Tools
 - Compiler Warnings
 - PC-Lint
 - splint
 - AceUnit
- Specific Embedded Aspects
 - Footprint
 - Performance
 - Safety
 - Security
 - Interrupts
 - Dealing with NVM and its limitations

Examples will be performed on the CPU architectures AMD64 and ARM. This training can be customized for specific CPUs and microcontrollers, for example: 6502, 6800, 68k, 8051, 80251, 8080, 80x86, AMD64, AVR, CalmRISC, ColdFire, CPU32, H8, MIPS, PowerPC, SECUCALM, SPARC, TriCore.

Booking

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