

Review of Code Security, Unit Testing, and Secure Deployment

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GIT Link: <https://github.com/hjshhrdk/SimpleNoteLocker.Core>

1. Introduction

This document summarizes the progress made in reviewing and implementing measures related to code security, code analysis, unit testing, and preparing for secure deployment of the desktop application project, as per our discussion.

I have prepared a demo project which is “SimpleNoteLocker” with integration of Sonar Qube in Visual Studio 2022. Tried to get understanding of role of Sonar Qube Extension or maybe with another extension (tool like Resharp from Jet Brains).

Also added NUnit test project for same application and try to test CRUD operation and get understanding of importance of NUnit test projects.

Case of secure deployment we can write code to prevent unauthenticated installation of application.

2. Topics

2.1 Integration of Sonar Qube

- Maintaining Code Quality from Start
- Identifying Potential issues early
- Improving Code maintainability
- Learning and Improving

2.2 NUnit Test

- Verifying code functionality
- Detect Defects Early
- Supporting Test-Driven development

- Code Refactoring
- Improving Code Quality & Patterns

2.3 Reverse Engineering

- Prevent to reverse Engineering we can use Obfuscators tools like

- a. SmartAssembly
- b. JetBrains dotPeek

but Reverse Engineering tools like Reflector can decompiled .dll files as well as .exe files

2.4 Secure Deployment

Approaches

2.4.1 From code base

- We can write code for license verification for specific time duration (Use of software as trial version)

2.4.2 From installer tool (Restricting Execution)

- We can add or create script file (Custom Action which contains state of installation process like Install, commit, Rollback and Uninstall) in installer software assuming with Installer Project Template in Visual Studio (Need to install Extension for Template)

This file should be with following extensions .exe, .dll, .vbs or .js

- Need to write specific conditions those are matches with Windows Machine environment if all conditions are matched then installation process will start other wise will raise prompt for installation failure.

More...

We can manipulate system's registry from code base as well as from the installer Project.

I have created a setup file for same app. I am sharing this installer file via GIT which contains Custom Action File of C#.

