Random Test Data Generation Specification Document

Started 29/01/2026
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SETU

1. Use Case Diagram

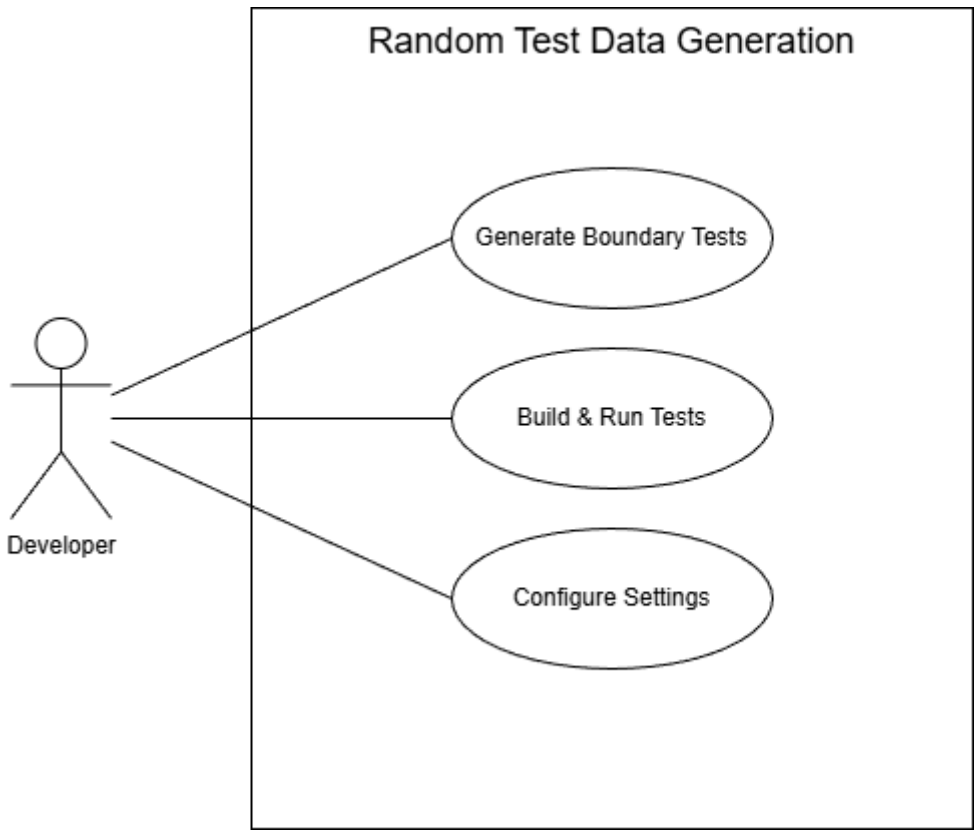


Figure 1 - Use Case Diagram

2. Use Case Description

Use Case Name	Generate Boundary Tests
Primary Actor	Developer
Description	The developer selects a C function to automatically generate a Google Test file containing boundary value test cases.
Main Flow	1. User identifies the C function or header file to be tested

	2. Developer selects “Generate Google Test” from the context menu. 3. Extension parses the function signature. 4. Extension generates a Google Test suite with an extern "C" bridge and automated boundary values.

Use Case Name	Build and Run Tests
Primary Actor	Developer
Description	The extension compiles the generated tests using g++ command line and executes them to provide immediate feedback
Main Flow	1. Developer triggers the “Run Tests” command. 2. Extension invokes g++ with -lgtest flag. 3. Extension executes the resulting test binary. 4. Results are displayed in the VS Code terminal.

Use Case Name	Configure Boundary Values
Primary Actor	Developer
Description	The developer modifies the default boundary values or adds custom test templates through the settings
Main Flow	1. Developer opens VS Code Settings. 2. Developer adjusts the JSON configuration for specific types.