

Secure vs Insecure Firmware Snippets

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CSE - A

Q119 - Secure OTA Update Compiler

1 Insecure Firmware Update Example

The following example demonstrates insecure firmware update logic where mandatory security checks are missing. Firmware is installed without signature verification or version validation.

```
void update_firmware(Firmware *fw) {
    download_firmware(fw);
    install_firmware(fw); // No verification or version check
}
```

2 Secure Firmware Update Example

This example illustrates secure firmware update logic where all required security checks are enforced before firmware installation.

```
void update_firmware(Firmware *fw) {
    download_firmware(fw);

    if (!verify_signature(fw)) {
        return;
    }

    if (fw->version <= current_version()) {
        return; // Prevent rollback
    }

    if (!is_trusted_source(fw)) {
        return;
    }

    install_firmware(fw);
}
```