

Unit Testing

Test Case

Nama Test Case	Method yg diuji	Data Uji	Hasil yang diharapkan (Expected Result)
Pinjam buku dengan stok cukup	loanBook(String title)	Judul: "Clean Code", stok: 3	Buku berhasil dipinjam, stok berkurang menjadi 2
Pinjam buku dengan stok 0	loanBook(String title)	Judul: "Zero Stock Book", stok: 0	Exception "Stok habis"
Pinjam buku yang tidak ada	loanBook(String title)	Judul: "Buku Tidak Ada"	Exception "Buku tidak ditemukan"

Hasil Pengujian

```
PS C:\Users\Ndrew\Downloads\Compressed\books> mvn test
WARNING: A terminally deprecated method in sun.misc.Unsafe has been called
WARNING: sun.misc.Unsafe::staticFieldBase has been called by com.google.inject.internal.aop.HiddenClassDefiner (file:/C:/Java/apache-maven-3.9.10/lib/guice-5.1.0-classes.jar)
WARNING: Please consider reporting this to the maintainers of class com.google.inject.internal.aop.HiddenClassDefiner
WARNING: sun.misc.Unsafe::staticFieldBase will be removed in a future release
[INFO] Scanning for projects...
[INFO] -----< uas:books >-----
[INFO] Building books 1.0-SNAPSHOT
[INFO] from pom.xml
[INFO] -----[ jar ]-----
[INFO] --- resources:3.3.1:resources (default-resources) @ books ---
[INFO] skip non existing resourceDirectory C:\Users\Ndrew\Downloads\Compressed\books\src\main\resources
[INFO] --- compiler:3.13.0:compile (default-compile) @ books ---
[INFO] Nothing to compile - all classes are up to date.
[INFO] --- resources:3.3.1:testResources (default-testResources) @ books ---
[INFO] skip non existing resourceDirectory C:\Users\Ndrew\Downloads\Compressed\books\src\test\resources
[INFO] --- compiler:3.13.0:testCompile (default-testCompile) @ books ---
[INFO] Recompiling the module because of added or removed source files.
[INFO] Compiling 2 source files with javac [debug release 17] to target\test-classes
[INFO] --- surefire:3.3.0:test (default-test) @ books ---
[INFO] Using auto detected provider org.apache.maven.surefire.junitplatform.JUnitPlatformProvider
[INFO]
[INFO] T E S T S
[INFO] -----
[INFO] Running uas.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.026 s -- in uas.AppTest
[INFO] Running uas.service.BookServiceTest
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.047 s -- in uas.service.BookServiceTest
[INFO] Results:
[INFO] Tests run: 4, Failures: 0, Errors: 0, Skipped: 0
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.250 s
[INFO] Finished at: 2025-06-10T22:47:19+07:00
[INFO] -----
PS C:\Users\Ndrew\Downloads\Compressed\books> 
```

Script Automation

Path: /src/test/uas/service/BookServiceTest.java

```
package uas.service;

import org.junit.jupiter.api.BeforeEach;
import org.junit.jupiter.api.Test;
import org.junit.jupiter.params.ParameterizedTest;
import org.junit.jupiter.params.provider.CsvSource;
import uas.model.Book;

import static org.junit.jupiter.api.Assertions.*;

public class BookServiceTest {
    private BookService service;

    @BeforeEach
    public void setUp() {
        service = new BookService();
        service.addBook("Clean Code", "Uncle Bob", 3);
        service.addBook("Zero Stock Book", "Unknown", 0);
    }

    @ParameterizedTest
    @CsvSource({
        "Clean Code, 2",
    })
    public void testLoanBookSuccess(String title, int expectedStock)
        throws Exception {
        service.loanBook(title);
        Book book = service.findBookByTitle(title);
        assertEquals(expectedStock, book.getStock());
    }

    @Test
    public void testLoanBookOutOfStock() {
        Exception exception = assertThrows(Exception.class, () -> {
            service.loanBook("Zero Stock Book");
        });
        assertEquals("Stok habis", exception.getMessage());
    }

    @Test
```

```
public void testLoanBookNotFound() {  
    Exception exception = assertThrows(Exception.class, () -> {  
        service.loanBook("Buku Tidak Ada");  
    });  
    assertEquals("Buku tidak ditemukan", exception.getMessage());  
}  
}
```