

Exercise 1: Mocking and Stubbing

```
import static org.mockito.Mockito.*;

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

import org.junit.jupiter.api.Test;

import org.mockito.Mockito;

public class StudentServiceTest {

    @Test
    void testGetStudentName() {

        StudentRepository mockRepo = mock(StudentRepository.class);

        when(mockRepo.findById(101)).thenReturn(new Student("Kanishkaa"));

        StudentService service = new StudentService(mockRepo);

        String name = service.getStudentName(101);

        assertEquals("Kanishkaa", name);
    }

    @Test
    void testStudentNotFound() {

        StudentRepository mockRepo = mock(StudentRepository.class);

        when(mockRepo.findById(999)).thenReturn(null);

        StudentService service = new StudentService(mockRepo);

        String name = service.getStudentName(999);

        assertEquals("Not Found", name);
    }
}
```

Output:

Running StudentServiceTest

✓ testGetStudentName() ✓

✓ testStudentNotFound() ✓

Test run finished after XX ms

[2 tests successful]

[0 tests failed]

Exercise 2: Verifying Interactions

```
import static org.mockito.Mockito.*;

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

import org.junit.jupiter.api.Test;

public class StudentServiceTest {

    @Test

    void testGetStudentName() {

        StudentRepository mockRepo = mock(StudentRepository.class);

        when(mockRepo.findById(101)).thenReturn(new Student("Kanishkaa"));

        StudentService service = new StudentService(mockRepo);

        String name = service.getStudentName(101);

        assertEquals("Kanishkaa", name);

        verify(mockRepo).findById(101);

    }

    @Test

    void testStudentNotFound() {

        StudentRepository mockRepo = mock(StudentRepository.class);

        when(mockRepo.findById(999)).thenReturn(null);

        StudentService service = new StudentService(mockRepo);

        String name = service.getStudentName(999);

        assertEquals("Not Found", name);

        verify(mockRepo).findById(999);

        verify(mockRepo, times(1)).findById(999);

        verify(mockRepo, never()).findById(123);

    }

}
```

Output:

✓ testGetStudentName() ✓

✓ testStudentNotFound() ✓

All interactions verified successfully.

