

بسم الله الرحمن الرحيم



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کد زیر را به کلاس AssertionsSampleTest اضافه کردیم:

```
@Test
void whenInsertingNullPerson_thenThrownException() {
    Exception exception = assertThrows(NullPointerException.class, () -> {
        PersonRepository repository = new PersonRepository();
        repository.insert(person: null);
    });

    assertEquals(expected: "person can't be null", exception.getMessage());
}

@Test
void whenUpdatingNullPerson_thenThrownException() {
    Exception exception = assertThrows(NullPointerException.class, () -> {
        PersonRepository repository = new PersonRepository();
        repository.update(person: null);
    });

    assertEquals(expected: "person can't be null", exception.getMessage());
}

@Test
void whenDeletingNullPerson_thenThrownException() {
    Exception exception = assertThrows(NullPointerException.class, () -> {
        PersonRepository repository = new PersonRepository();
        repository.delete(name: null);
    });

    assertEquals(expected: "name can't be null", exception.getMessage());
}

@Test
void whenGettingNullPerson_thenThrownException() {
    Exception exception = assertThrows(NullPointerException.class, () -> {
        PersonRepository repository = new PersonRepository();
        repository.get(null);
    });

    assertEquals(expected: "name can't be null", exception.getMessage());
}
```

که درصد پوشش PersonRepository تغییر کرد:

قبل از اضافه کردن کد:

Current scope: [all classes](#) | [com.unittest.codecoverage.repositories](#)

#### Coverage Summary for Package: com.unittest.codecoverage.repositories

| Package                                | Class, % | Method, % | Line, %  |
|--|----------|-----------|----------|
| com.unittest.codecoverage.repositories | 0% (0/1) | 0% (0/5)  | 0% (0/7) |

| Class                            | Class, % | Method, % | Line, %  |
|----------------------------------|----------|-----------|----------|
| <a href="#">PersonRepository</a> | 0% (0/1) | 0% (0/5)  | 0% (0/7) |

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بعد از اضافه کردن کد:

Current scope: [all classes](#) | [com.unittest.codecoverage.repositories](#)

#### Coverage Summary for Package: com.unittest.codecoverage.repositories

| Package                                | Class, %   | Method, %  | Line, %     |
|--|------------|------------|-------------|
| com.unittest.codecoverage.repositories | 100% (1/1) | 100% (5/5) | 71.4% (5/7) |

| Class                            | Class, %   | Method, %  | Line, %     |
|----------------------------------|------------|------------|-------------|
| <a href="#">PersonRepository</a> | 100% (1/1) | 100% (5/5) | 71.4% (5/7) |

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کد زیر را به کلاس TrafficBehaviorServiceTest اضافه کردیم:

```
@Test
@DisplayName("Should throw exception when footpassenger crosses the crosswalk during heavy traffic without looking two sides")
public void testFootpassengerCrossTheCrossWalkInTheTwoWayStreet_shouldThrowBehaviorExceptionWhenFootpassengerCrossesTheRoadDuringHeavyTrafficWithoutLookTwoSides() {

    Traffic currentTraffic = new Traffic();
    currentTraffic.setIntenseCarTraffic(true);
    currentTraffic.setStreetDirectionFlow(StreetDirectionFlow.TWO_WAY);
    Footpassenger currentFootpassengerBehavior = new Footpassenger();
    currentFootpassengerBehavior.setCrossedTheCrosswalk(true);
    currentFootpassengerBehavior.setCrossedTrafficLigth(TrafficLigth.GREEN);
    currentFootpassengerBehavior.setLookedToTheLeft(false);
    currentFootpassengerBehavior.setLookedToTheRight(false);

    Assertions.assertThatThrownBy(() -> trafficBehaviorService.footpassengerCrossTheStreet(currentTraffic, currentFootpassengerBehavior))
        .isInstanceOf(BehaviorException.class)
        .hasMessage("You should be more careful");
}
```

که درصد پوشش کلاس های Footpassenger و StreetDirectionFlow و Traffic به شکل زیر تغییر کردند:

قبل از اضافه کردن کد:

Current scope: [all classes](#) | [com.unittest.codecoverage.models](#)

#### Coverage Summary for Package: com.unittest.codecoverage.models

| Package                          | Class, %    | Method, %     | Line, %       |
|----------------------------------|-------------|---------------|---------------|
| com.unittest.codecoverage.models | 83.3% (5/6) | 62.9% (22/35) | 62.9% (22/35) |

| Class                               | Class, %   | Method, %    | Line, %      |
|-------------------------------------|------------|--------------|--------------|
| <a href="#">Footpassenger</a>       | 100% (1/1) | 81.8% (9/11) | 81.8% (9/11) |
| <a href="#">Gender</a>              | 100% (1/1) | 100% (2/2)   | 100% (2/2)   |
| <a href="#">Person</a>              | 100% (1/1) | 85.7% (6/7)  | 85.7% (6/7)  |
| <a href="#">StreetDirectionFlow</a> | 0% (0/1)   | 0% (0/2)     | 0% (0/2)     |
| <a href="#">Traffic</a>             | 100% (1/1) | 27.3% (3/11) | 27.3% (3/11) |
| <a href="#">TrafficLigth</a>        | 100% (1/1) | 100% (2/2)   | 100% (2/2)   |

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بعد از اضافه کردن کد:

Current scope: [all classes](#) | com.unittest.codecoverage.models

Coverage Summary for Package: com.unittest.codecoverage.models

| Package                          | Class, %   | Method, %     | Line, %       |
|----------------------------------|------------|---------------|---------------|
| com.unittest.codecoverage.models | 100% (6/6) | 74.3% (26/35) | 74.3% (26/35) |

  

| Class                               | Class, %   | Method, %     | Line, %       |
|-------------------------------------|------------|---------------|---------------|
| <a href="#">Footpassenger</a>       | 100% (1/1) | 90.9% (10/11) | 90.9% (10/11) |
| <a href="#">Gender</a>              | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |
| <a href="#">Person</a>              | 100% (1/1) | 85.7% (6/7)   | 85.7% (6/7)   |
| <a href="#">StreetDirectionFlow</a> | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |
| <a href="#">Traffic</a>             | 100% (1/1) | 36.4% (4/11)  | 36.4% (4/11)  |
| <a href="#">TrafficLigth</a>        | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |

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کد زیر را به کلاس PersonServiceTest اضافه کردیم:

```
@Test
public void testDelete_shouldThrowPersonExceptionWhenPersonNameIsNull() {

    List<String> expectedErrors = Lists.newArrayList( ...elements: "Name is required");
    String expectedMessage = String.join( delimiter: ";", expectedErrors);
    Person person = new Person();
    person.setGender(Gender.M);
    person.setName("");

    assertThatThrownBy(() -> service.delete(person.getName())) AbstractThrowableAssert<capture of ?, capture of ? extends Throwable>
        .isInstanceOf(PersonException.class) capture of ?
        .hasFieldOrPropertyWithValue( name: "errors", expectedErrors)
        .hasMessage(expectedMessage);
}
```

که درصد پوشش کلاس های PersonException و PersonValidator و PersonServiceImpl تغییر کرد:  
قبل از اضافه کردن کد:

Current scope: [all classes](#)

Overall Coverage Summary

| Package     | Class, %      | Method, %     | Line, %       |
|-------------|---------------|---------------|---------------|
| all classes | 92.3% (12/13) | 73.7% (42/57) | 71.1% (59/83) |

  

Coverage Breakdown

| Package   | Class, %   | Method, %     | Line, %       |
|---|------------|---------------|---------------|
| com.unittest.codecoverage                                   | 0% (0/1)   | 0% (0/2)      | 0% (0/2)      |
| <a href="#">com.unittest.codecoverage.exceptions</a>        | 100% (2/2) | 100% (3/3)    | 66.7% (4/6)   |
| <a href="#">com.unittest.codecoverage.models</a>            | 100% (6/6) | 74.3% (26/35) | 74.3% (26/35) |
| <a href="#">com.unittest.codecoverage.models.validators</a> | 100% (1/1) | 80% (4/5)     | 90.9% (10/11) |
| <a href="#">com.unittest.codecoverage.repositories</a>      | 100% (1/1) | 100% (5/5)    | 71.4% (5/7)   |
| <a href="#">com.unittest.codecoverage.services.impl</a>     | 100% (2/2) | 57.1% (4/7)   | 63.6% (14/22) |

بعد از اضافه کردن کد:

| Current scope: all classes                  |               |               |               |
|---|---------------|---------------|---------------|
| Overall Coverage Summary                    |               |               |               |
| Package                                     | Class, %      | Method, %     | Line, %       |
| all classes                                 | 92.3% (12/13) | 77.2% (44/57) | 77.1% (64/83) |
| Coverage Breakdown                          |               |               |               |
| Package                                     | Class, %      | Method, %     | Line, %       |
| com.unittest.codecoverage                   | 0% (0/1)      | 0% (0/2)      | 0% (0/2)      |
| com.unittest.codecoverage.exceptions        | 100% (2/2)    | 100% (3/3)    | 100% (6/6)    |
| com.unittest.codecoverage.models            | 100% (6/6)    | 74.3% (26/35) | 74.3% (26/35) |
| com.unittest.codecoverage.models.validators | 100% (1/1)    | 100% (5/5)    | 100% (11/11)  |
| com.unittest.codecoverage.repositories      | 100% (1/1)    | 100% (5/5)    | 71.4% (5/7)   |
| com.unittest.codecoverage.services.impl     | 100% (2/2)    | 71.4% (5/7)   | 72.7% (16/22) |

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نکته:

تابع `requiredName` در کلاس `PersonValidator` وقتی مقدار `False` برمی‌گرداند که یا استرینگ `null` باشد و یا طول آن صفر باشد ولی در کلاس `PersonServiceImpl` و در توابع `get` و `delete` وقتی `requiredName` مقدار `True` برمی‌گرداند `throw exception` رخ می‌دهد در صورتی که باید برعکس باشد و به همین خاطر من این توابع را به شکل زیر تغییر دادم تا کد درست کار کند:

```
@Override
public Person get(String name) {
    if(!validator.requiredName(name)) {
        throw new PersonException("Name is required");
    }
    return repository.get(name);
}

@Override
public void delete(String name) {
    if(!validator.requiredName(name)) {
        throw new PersonException("Name is required");
    }
    repository.delete(name);
}
```

کد زیر را به کلاس `AssertionsSampleTest` اضافه کردیم:

```

@Test
void testSetGetPersonAge(){
    Person person = new Person();
    person.setAge(15);
    assertEquals( expected: 15, person.getAge());
}

```

که درصد پوشش کلاس Person تغییر کرد:  
قبل از اضافه کردن کد:

Current scope: [all classes](#) | com.unittest.codecoverage.models

Coverage Summary for Package: com.unittest.codecoverage.models

| Package                          | Class, %   | Method, %     | Line, %       |
|----------------------------------|------------|---------------|---------------|
| com.unittest.codecoverage.models | 100% (6/6) | 74.3% (26/35) | 74.3% (26/35) |

  

| Class                               | Class, %   | Method, %     | Line, %       |
|-------------------------------------|------------|---------------|---------------|
| <a href="#">Footpassenger</a>       | 100% (1/1) | 90.9% (10/11) | 90.9% (10/11) |
| <a href="#">Gender</a>              | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |
| <a href="#">Person</a>              | 100% (1/1) | 85.7% (6/7)   | 85.7% (6/7)   |
| <a href="#">StreetDirectionFlow</a> | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |
| <a href="#">Traffic</a>             | 100% (1/1) | 36.4% (4/11)  | 36.4% (4/11)  |
| <a href="#">TrafficLigth</a>        | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |

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بعد از اضافه کردن کد:

Current scope: [all classes](#) | com.unittest.codecoverage.models

Coverage Summary for Package: com.unittest.codecoverage.models

| Package                          | Class, %   | Method, %     | Line, %       |
|----------------------------------|------------|---------------|---------------|
| com.unittest.codecoverage.models | 100% (6/6) | 77.1% (27/35) | 77.1% (27/35) |

  

| Class                               | Class, %   | Method, %     | Line, %       |
|-------------------------------------|------------|---------------|---------------|
| <a href="#">Footpassenger</a>       | 100% (1/1) | 90.9% (10/11) | 90.9% (10/11) |
| <a href="#">Gender</a>              | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |
| <a href="#">Person</a>              | 100% (1/1) | 100% (7/7)    | 100% (7/7)    |
| <a href="#">StreetDirectionFlow</a> | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |
| <a href="#">Traffic</a>             | 100% (1/1) | 36.4% (4/11)  | 36.4% (4/11)  |
| <a href="#">TrafficLigth</a>        | 100% (1/1) | 100% (2/2)    | 100% (2/2)    |

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جدول تغییرات پوشش کلاس‌ها:

| کلاس                       | پوشش قبل از تغییر |        |      | پوشش بعد از تغییر |        |      |
|----------------------------|-------------------|--------|------|-------------------|--------|------|
|                            | class             | method | line | class             | method | line |
| BehaviorException          | 100               | 100    | 100  | 100               | 100    | 100  |
| PersonException            | 100               | 100    | 60   | 100               | 100    | 100  |
| PersonValidator            | 100               | 75     | 90   | 100               | 100    | 100  |
| Footpassenger              | 100               | 80     | 81   | 100               | 90     | 90   |
| Gender                     | 100               | 100    | 100  | 100               | 100    | 100  |
| Person                     | 100               | 83     | 85   | 100               | 100    | 100  |
| StreetDirectionFlow        | 0                 | 0      | 0    | 100               | 100    | 100  |
| Traffic                    | 100               | 20     | 27   | 100               | 30     | 36   |
| TrafficLigth               | 100               | 100    | 100  | 100               | 100    | 100  |
| PersonRepository           | 0                 | 0      | 0    | 100               | 100    | 71   |
| PersonServiceImpl          | 100               | 40     | 30   | 100               | 60     | 50   |
| TrafficBehaviorServiceImpl | 100               | 100    | 100  | 100               | 100    | 100  |