

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, %
PersonRepository	0% (0/1)	0% (0/5)	0% (0/7)

generated on 2021-11-26 04:52

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, %
PersonRepository	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, %
Footpassenger	100% (1/1)	81.8% (9/11)	81.8% (9/11)
Gender	100% (1/1)	100% (2/2)	100% (2/2)
Person	100% (1/1)	85.7% (6/7)	85.7% (6/7)
StreetDirectionFlow	0% (0/1)	0% (0/2)	0% (0/2)
Traffic	100% (1/1)	27.3% (3/11)	27.3% (3/11)
TrafficLigth	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, %
Footpassenger	100% (1/1)	90.9% (10/11)	90.9% (10/11)
Gender	100% (1/1)	100% (2/2)	100% (2/2)
Person	100% (1/1)	85.7% (6/7)	85.7% (6/7)
StreetDirectionFlow	100% (1/1)	100% (2/2)	100% (2/2)
Traffic	100% (1/1)	36.4% (4/11)	36.4% (4/11)
TrafficLigth	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)
com.unittest.codecoverage.exceptions	100% (2/2)	100% (3/3)	66.7% (4/6)
com.unittest.codecoverage.models	100% (6/6)	74.3% (26/35)	74.3% (26/35)
com.unittest.codecoverage.models.validators	100% (1/1)	80% (4/5)	90.9% (10/11)
com.unittest.codecoverage.repositories	100% (1/1)	100% (5/5)	71.4% (5/7)
com.unittest.codecoverage.services.impl	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, %
Footpassenger	100% (1/1)	90.9% (10/11)	90.9% (10/11)
Gender	100% (1/1)	100% (2/2)	100% (2/2)
Person	100% (1/1)	85.7% (6/7)	85.7% (6/7)
StreetDirectionFlow	100% (1/1)	100% (2/2)	100% (2/2)
Traffic	100% (1/1)	36.4% (4/11)	36.4% (4/11)
TrafficLigth	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, %
Footpassenger	100% (1/1)	90.9% (10/11)	90.9% (10/11)
Gender	100% (1/1)	100% (2/2)	100% (2/2)
Person	100% (1/1)	100% (7/7)	100% (7/7)
StreetDirectionFlow	100% (1/1)	100% (2/2)	100% (2/2)
Traffic	100% (1/1)	36.4% (4/11)	36.4% (4/11)
TrafficLigth	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

آدرس مخزن گیت:

<https://github.com/mohammad-fattah/SE-Lab-6>