OODP– Session 5b

Session times

PT group 1 – Monday	18:00-21:00	room: Malet 403
PT group 2 – Thursday	18:00-21:00	room: Malet 407
FT - Tuesday	13:30-17:00	room: Malet 404

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Web Page: http://www.dcs.bbk.ac.uk/~oded

Visiting Hours: Tuesday 17:00 to 19:00

Adapter

Adapter

1. Start Eclipse
2. Close any open project
3. Create new java project call it “Adapter”
4. Create three new packages “example”, “tests”
5. Create a new Junit test “PersonTest” in package tests.

“PersonTest” Code in next slide

Select

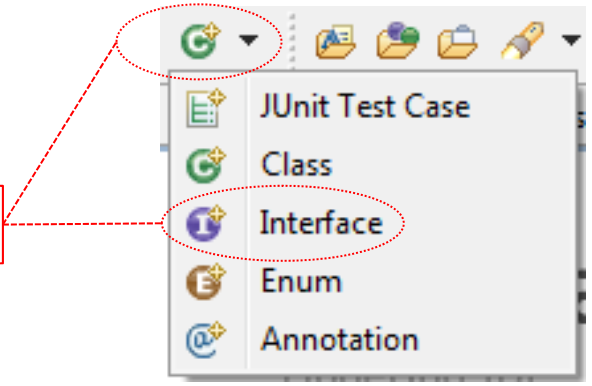
Adapter – first classes for example

```
@Test
public void test() {
        String expectedAnswer = “A person";
        String actualAnswer;

        Person classUnderTest = new Person ();

        actualAnswer = classUnderTest.whoAreYou();

        assertEquals("Wrong Answer!", expectedAnswer, actualAnswer);
}
```

1. Use IDE to create class ‘Person’ check that it is in the proper package
2. Use IDE to create method ‘`whoAreYou`’ in class ‘Person’
3. Run test. If it fails properly, then commit
4. Implement method ‘`whoAreYou`’ in class ‘Person’
5. Run test. If it passes like it should, then commit

Adapter (using inheritance) – new interface

1. Create a new interface with the following code




```
public interface AnotherPerson {
        public abstract String youWho();
}
```

Adapter – new test in new file

```
@Test
public void test() {
        String expectedAnswer = "A person";
        String actualAnswer;

        AnotherPerson classUnderTest = new Nosrep();

        actualAnswer = classUnderTest.youAreWho();

        assertEquals("Wrong Answer!", expectedAnswer, actualAnswer);
}
```

1. Use IDE to create class ‘Nosrep’ check that it is in the proper package
2. Use IDE to create method ‘Who in class ‘Nosrep’
3. Run test if fails properly, then commit

Adapter – code for class ‘Nosrep’

```
public class Nosrep implements AnotherPerson {

        private Person person;

        public Nosrep(){
                person = new Person();
        }

        public String youWho() {
                return person.whoAreYou();
        }
}
```

1. Update code

2. Run test. If it passes like it should, then commit

This is an example of adapter using delegation

Adapter – new test in new file ‘PAPTest’

```
@Test
public void test() {
        String expectedAnswer = "A person";
        String actualAnswer;

        PAP classUnderTest = new PAP();

        actualAnswer = classUnderTest.youWho();

        assertEquals("Wrong Answer!", expectedAnswer, actualAnswer);
}
```

1. Use IDE to create class ‘PAP’ as seen in the next slide

Adapter

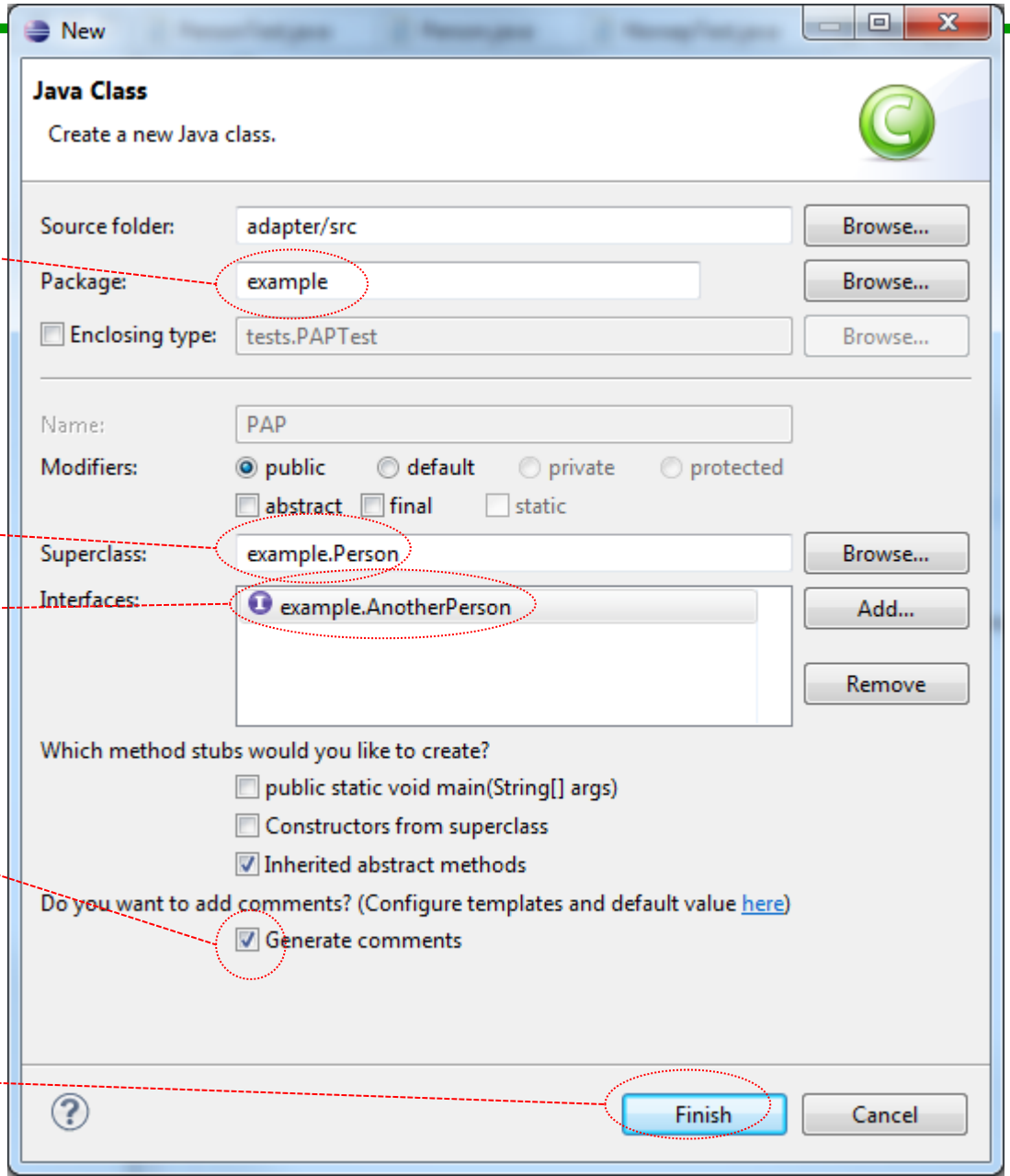
1.ensure

2.select

3. select

4. select

5. select



Adapter – PAP class generated code

```
 */
public class PAP extends Person implements AnotherPerson {

    /* (non-Javadoc)
     * @see example.AnotherPerson#youWho()
     */
    @Override
    public String youWho() {
        // TODO Auto-generated method stub
        return null;
    }

}
```

1. Run test. If test fails properly, then commit

Adapter – PAP class implemented

```
 */
public class PAP extends Person implements AnotherPerson {

    /* (non-Javadoc)
     * @see example.AnotherPerson#youWho()
     */
    @Override
    public String youWho() {
        // TODO Auto-generated method stub
        return null;
    }

}
```

1. Run test. If it passes like it should, then commit

Select

Adapter

```
 */
public class PAP extends Person implements AnotherPerson {

    /* (non-Javadoc)
     * @see example.AnotherPerson#youWho()
     */
    @Override
    public String youWho() {
        // TODO Auto-generated method stub
        return whoAreYou();
    }

}
```

1. Change code to thist

2. Run test. If it passes like it should, then commit

Decorator

Decorator

1. Start Eclipse
2. Close any open project
3. Create new java project call it “Decorator”
4. Create three new packages “oldCode”, “newCode”, “tests”
5. Create a new Junit test “RoomTest” in package tests.

“RoomTest” Code in next slide

Select

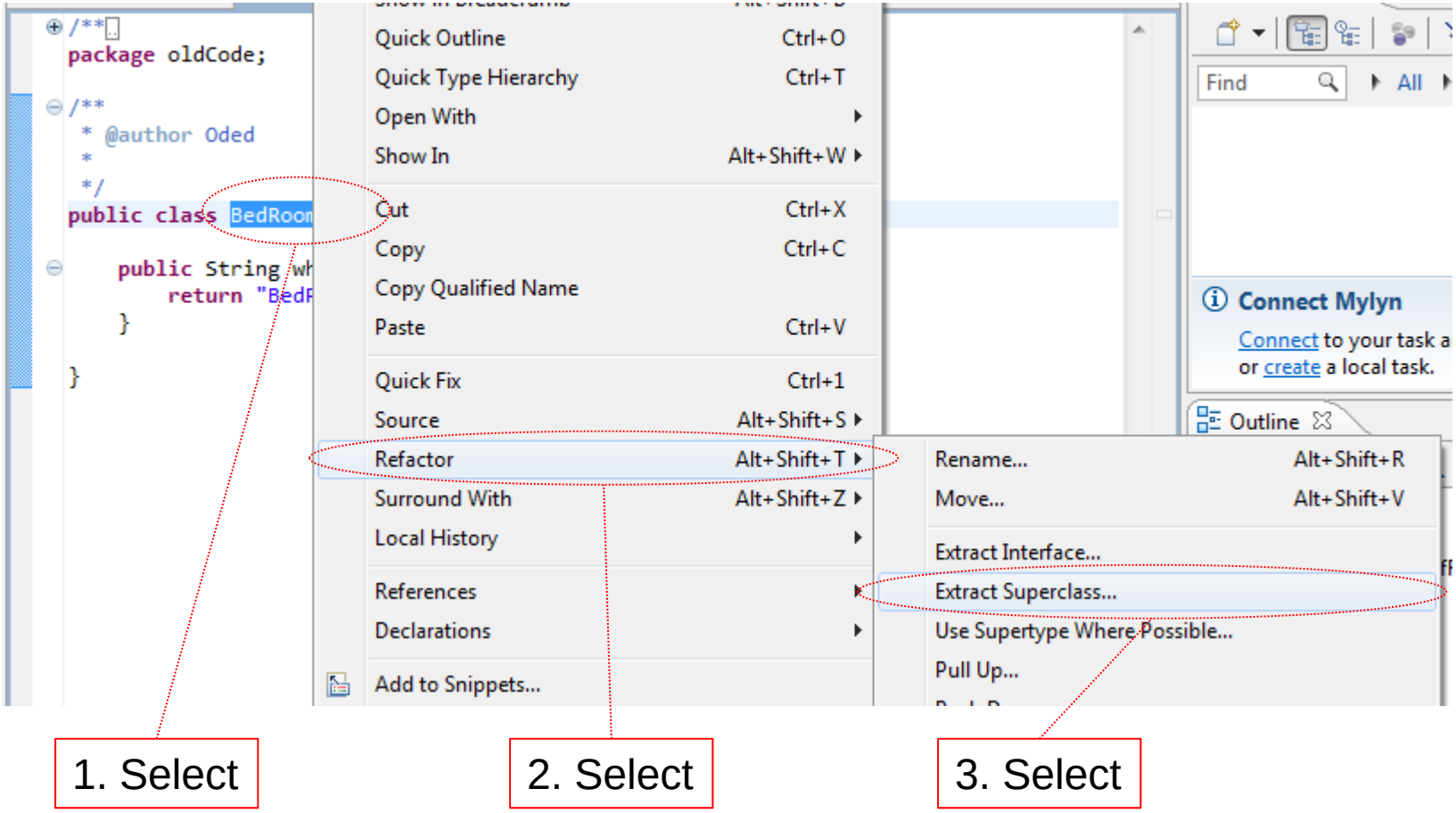
Decorator

```
public class RoomTest {
        @Test
        public void test() {
                String expectedResult = "BedRoom";
                String actualResult = null;

                BedRoom classUnderTest = new BedRoom();

                actualResult = classUnderTest.whatKindOfRoomAreYou();

                assertEquals("Wrong answer! ", expectedResult, actualResult);
        }
}
```

1. Use IDE to generate class “BedRoom” (make sure it is in package “oldCode”)
2. Use IDE to generate method “`whatKindOfRoomAreYou`” in class “BedRoom”
3. Run test, if fails in the proper way commit code.
4. Fix “`whatKindOfRoomAreYou`” so that test passes.
5. Commit

Decorator

1. Use Refactor to extract Super Class from class “BedRoom”

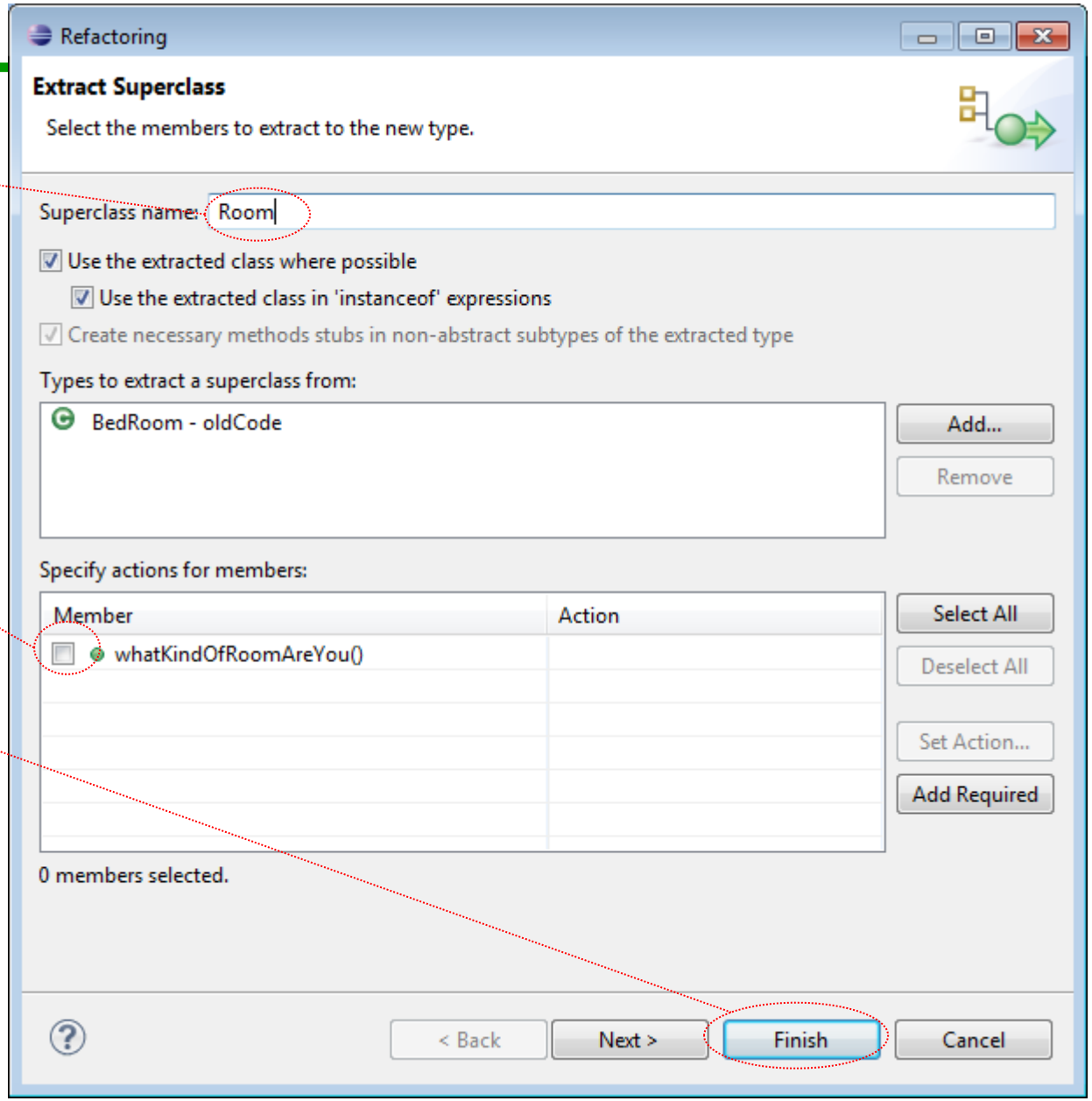


Decorator

1. Fill in

2. Don’t Select!

3. Select



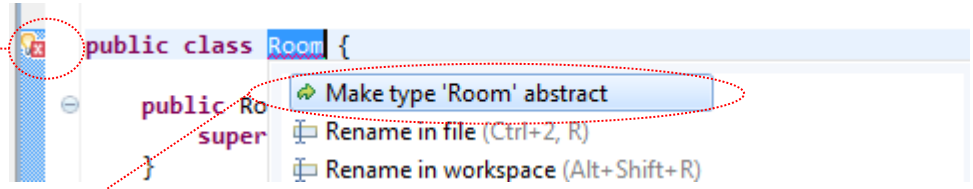
Decorator

This is a call to the constructor of class"Room"'s superclass

```
public class Room {

    public Room() {
    super();
    }

    public abstract String whatKindOfRoomAreYou();

}
```

1. Add this line of code

2. Select



3. Select

Decorator

This is a call to the constructor of class"Room"'s superclass

```
package oldCode;

public abstract class Room {

    public Room() {
        super();
    }

    public abstract String whatKindOfRoomAreYou();

}
```

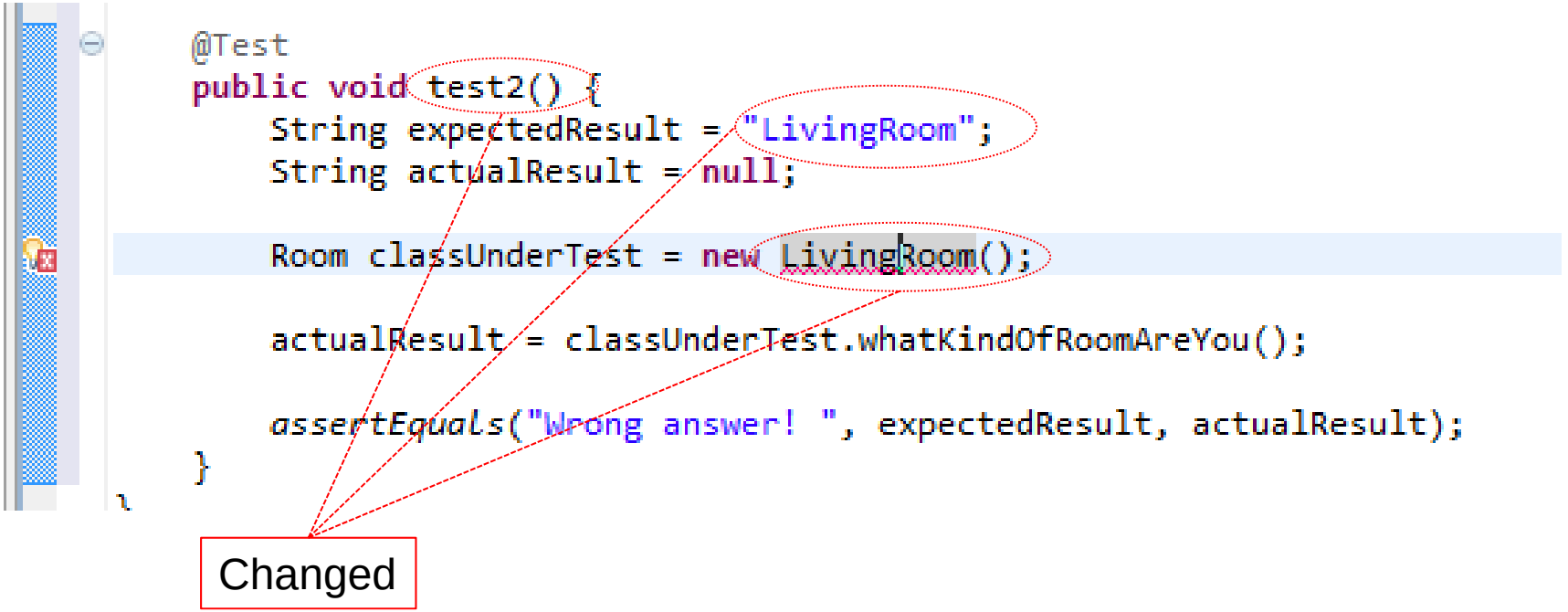
1. Change

```
public class RoomTest {

    @Test
    public void test() {
        String expectedResult = "BedRoom";
        String actualResult = null;

        Room classUnderTest = new BedRoom();

        actualResult = classUnderTest.whatKindOfRoomAreYou();

        assertEquals("Wrong answer! ", expectedResult, actualResult);
    }
```

2. Run test if passes like it should then commit

Decorator

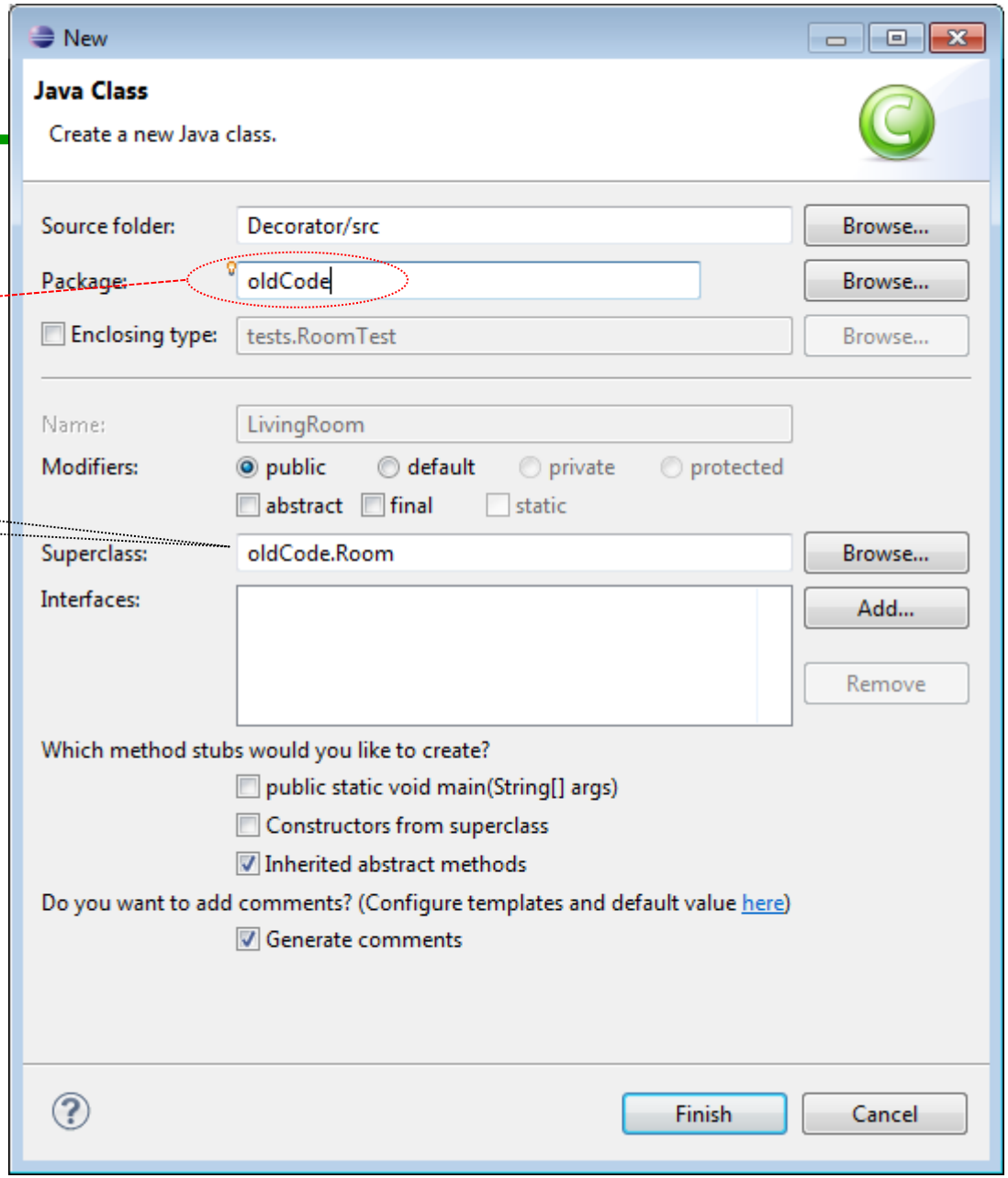
1. Use Refactor to extract Interface from class “BedRoom” call the interface “Room”
2. Run test, if passes then commit
3. Create new test by copy past from the existing one
4. Use test to generate “LivingRoom” class (remember it should implement Interface “Room” and be in package “oldCode”)
5. Run tests. If it fails properly, then commit. Fix problem and when test passes commit again.



Decorator

1. Make sure

Can be selected manually



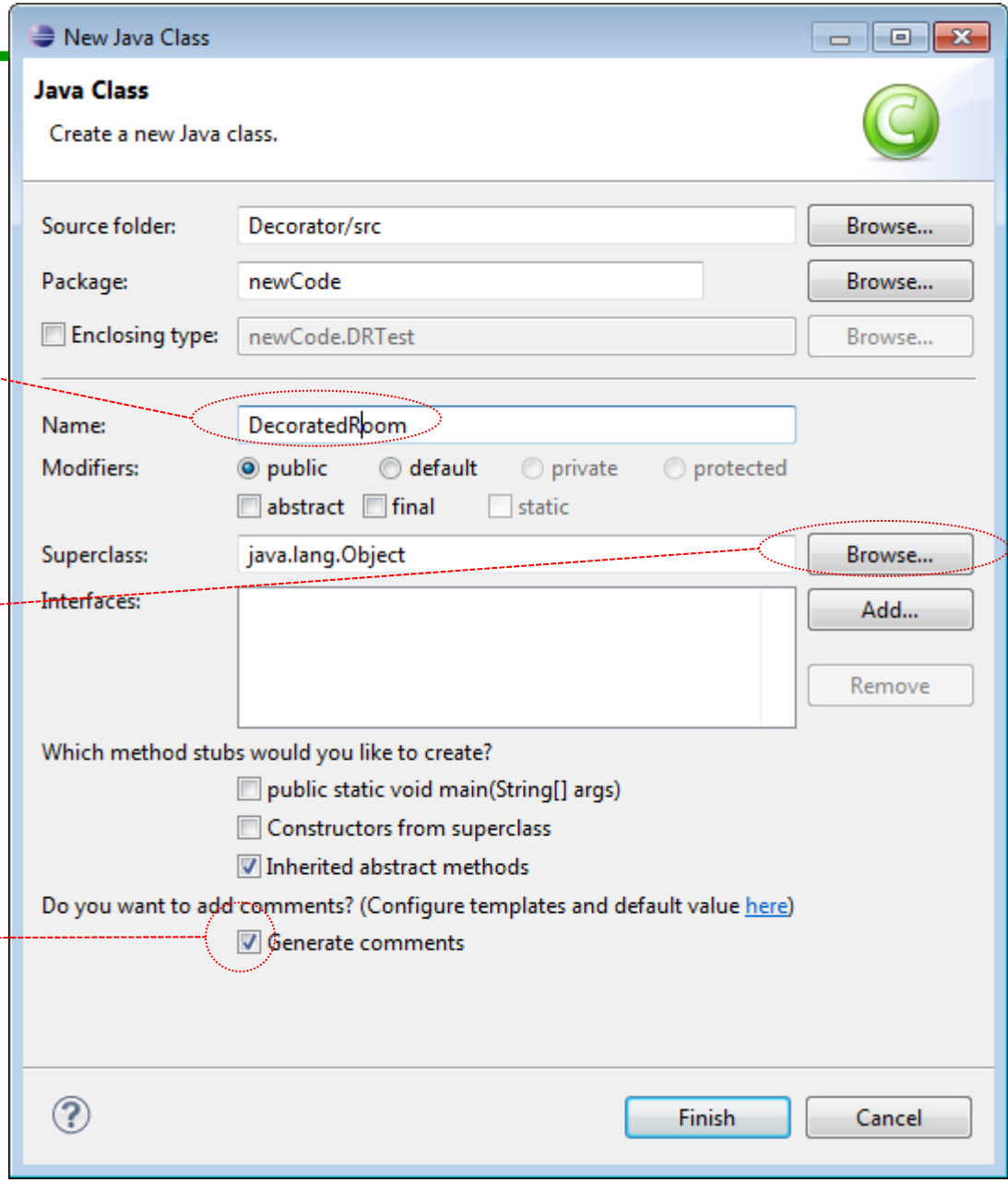
Run tests if expected failure then commit. Fix problem and when test passes commit again.

Decorator –new class ‘DecoratedRoom’ in newCode

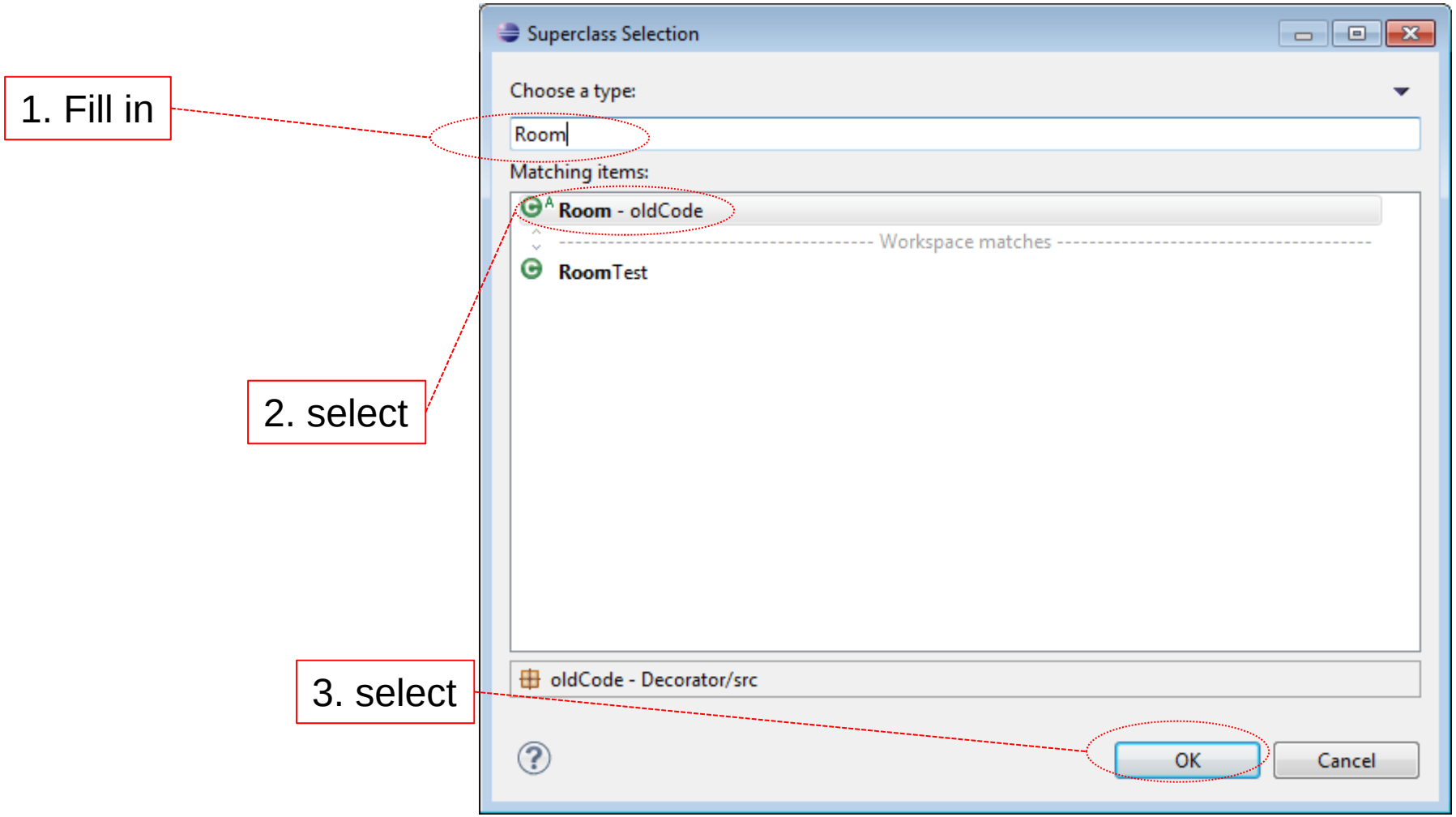
1. Fill in

3. select

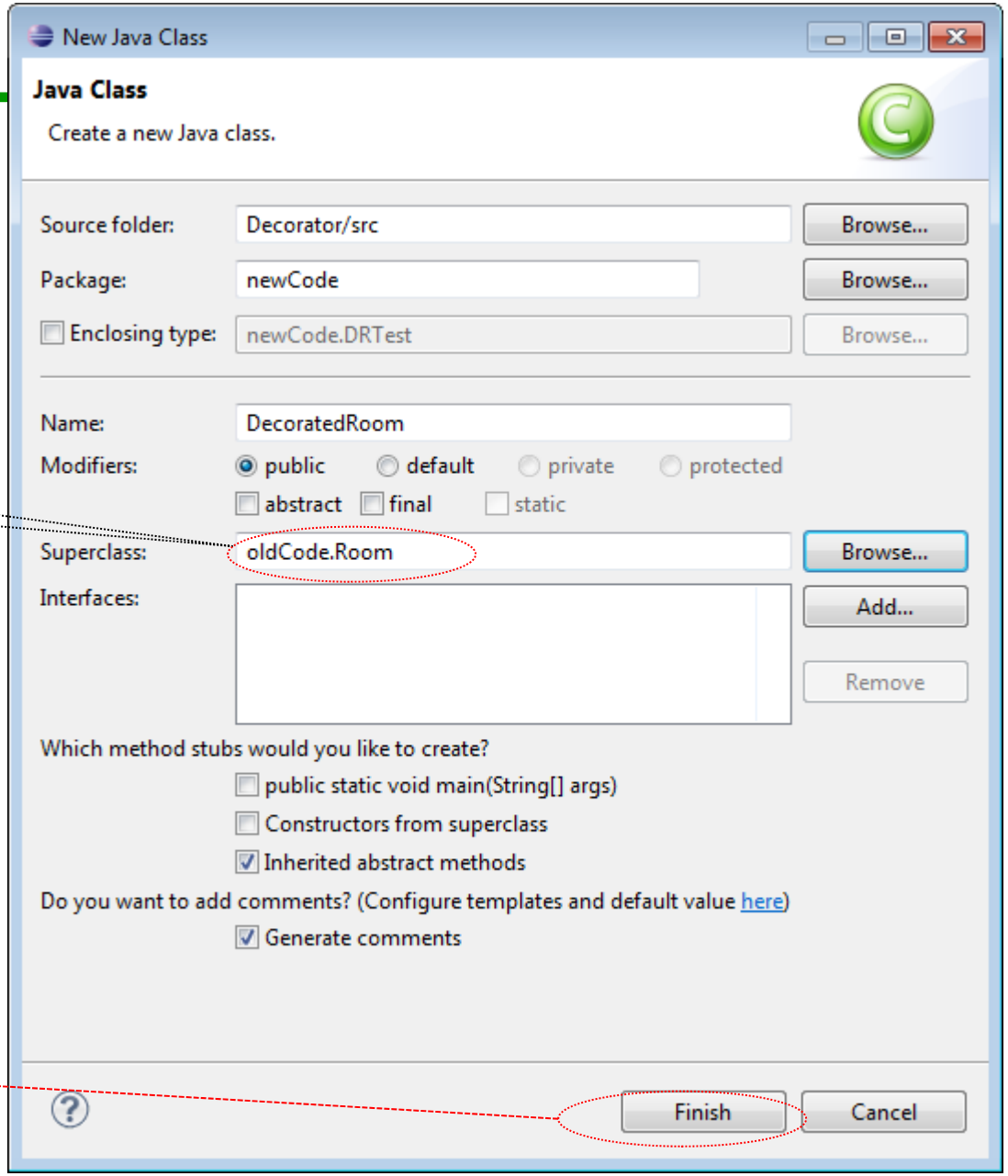
2. select



Decorator –new class in newCode



Decorator



Was added

Select

Decorator

What you got

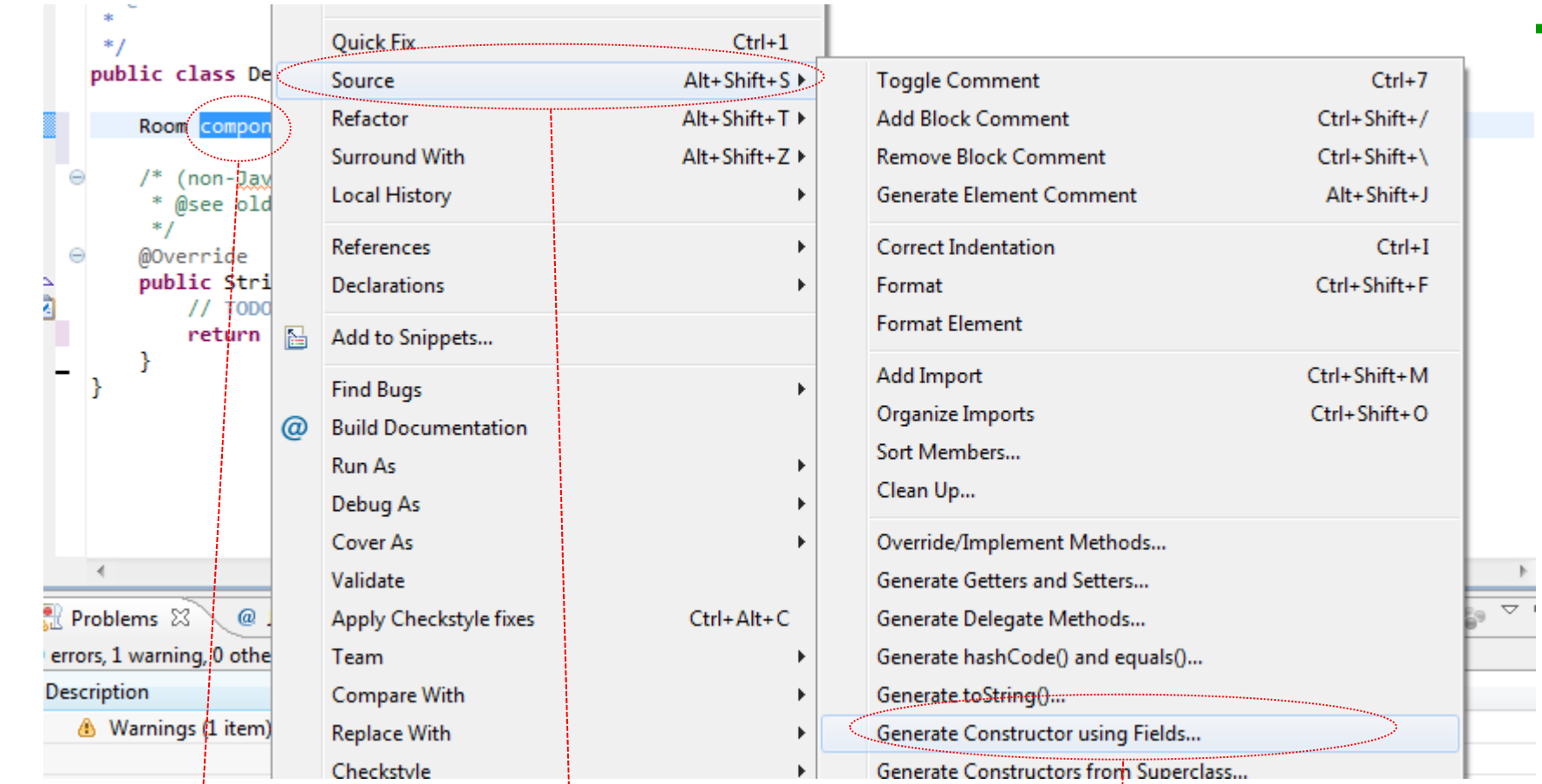
```
public class DecoratedRoom extends Room {

    /* (non-Javadoc)
     * @see oldCode.Room#whatKindOfRoomAreYou()
     */
    @Override
    public String whatKindOfRoomAreYou() {
        // TODO Auto-generated method stub
        return null;
    }
}
```

1. Add

1. Change to

```
 */
public class DecoratedRoom extends Room {

    Room component;

    /* (non-Javadoc)
     * @see oldCode.Room#whatKindOfRoomAreYou()
     */
    @Override
    public String whatKindOfRoomAreYou() {
        // TODO Auto-generated method stub
        return component.whatKindOfRoomAreYou();
    }
}
```

Decorator – still working on ‘DecoratedRoom’

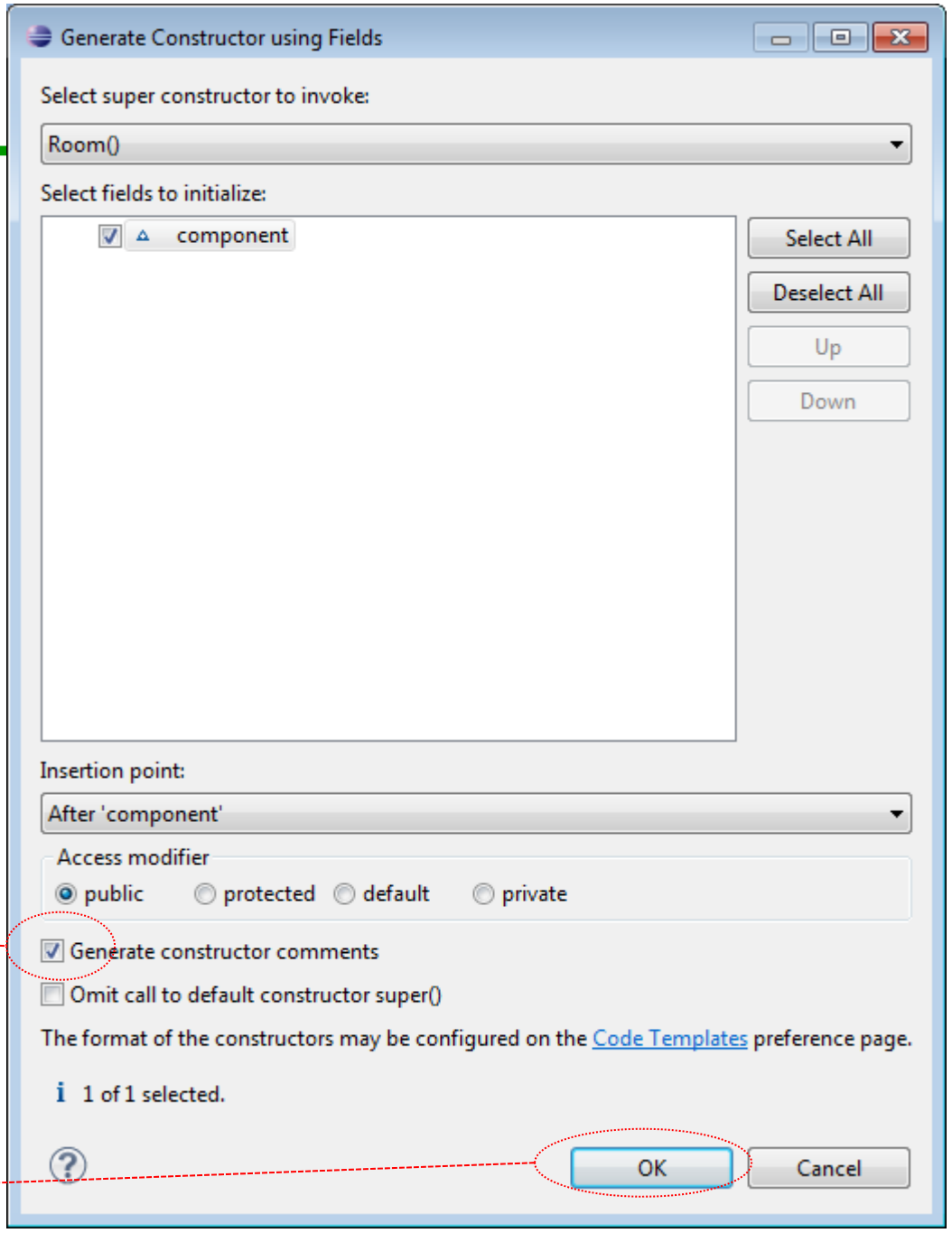


1. Select

2. Select

3. Select

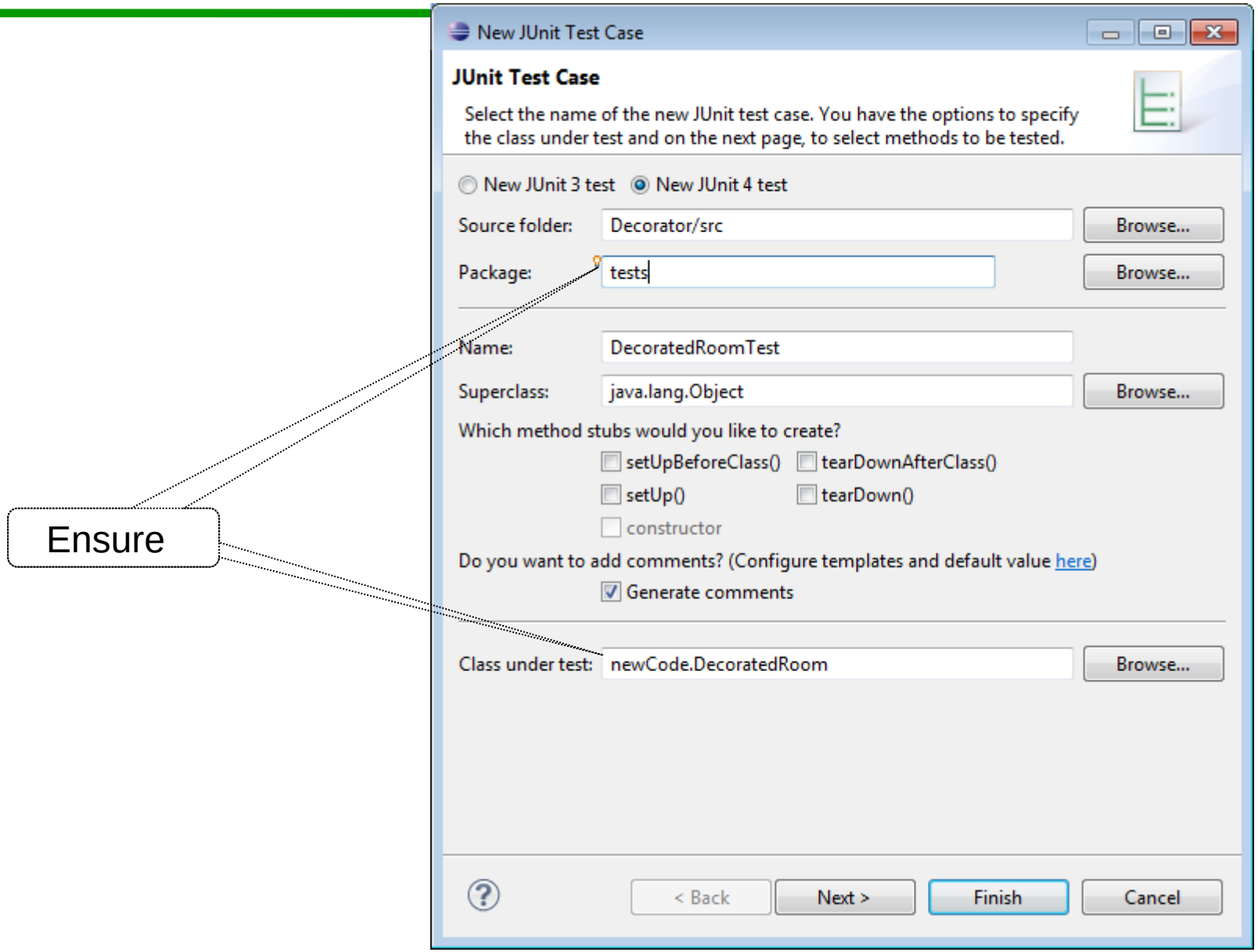
Decorator



1. Select

2. Select

Decorator – create test for ‘DecoratedRoom’



Decorator – code for ‘DecoratedRoomTest’

```
@Test
public void test() {
        String expectedResult = "BedRoom";
        String actualResult = null;

        DecoratedRoom classUnderTest = new DecoratedRoom(new BedRoom());

        actualResult = classUnderTest.whatKindOfRoomAreYou();

        assertEquals("Wrong answer! ", expectedResult, actualResult);
}
```

1. Change test code to this

2. Run test. If passes like it should, then commit

Decorator – new test ‘DecoratedRoomWithSwitch”

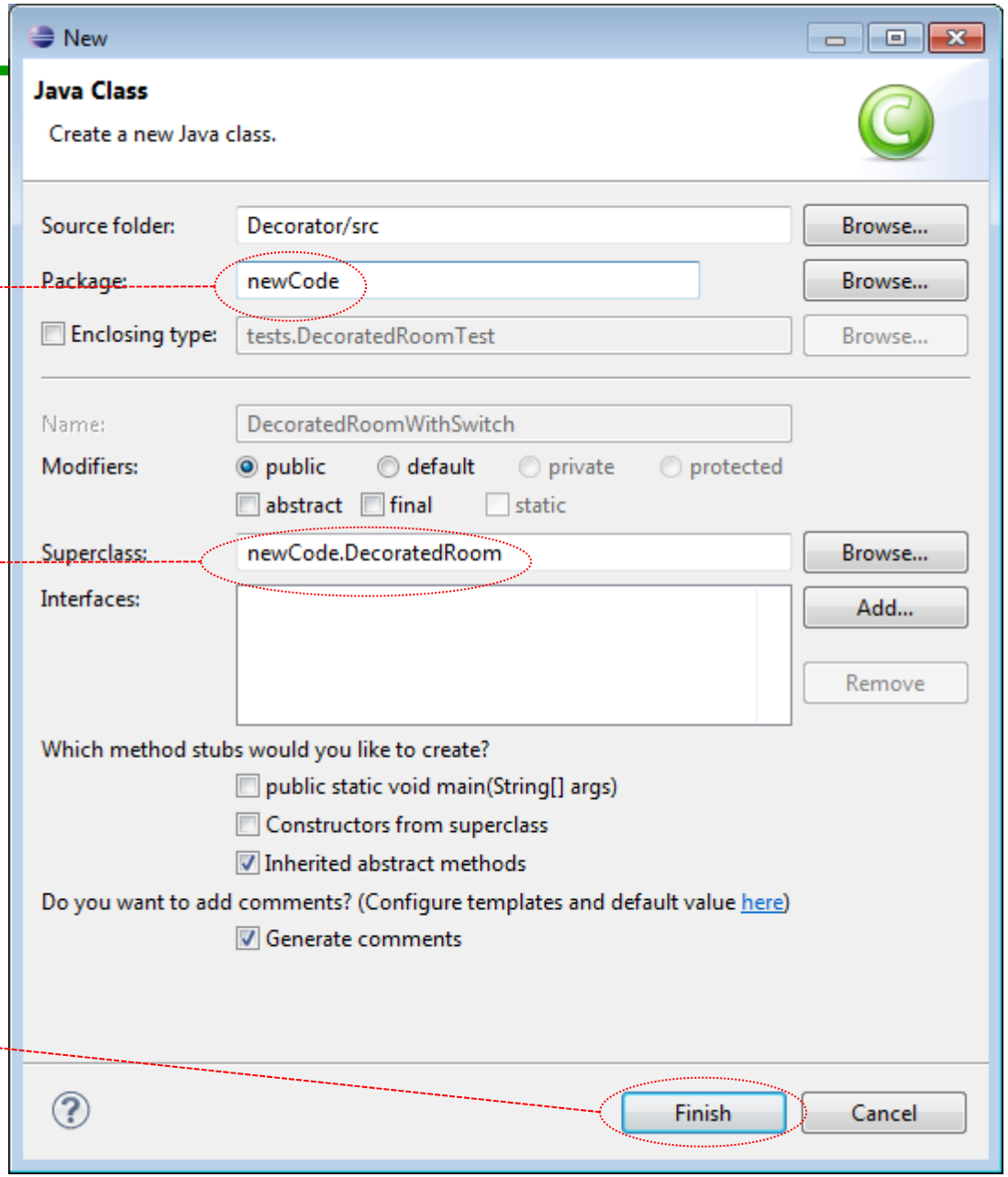
```
@Test
public void test() {
        String expectedResult = “yes";
        String actualResult = null;

        DecoratedRoomWithSwitch classUnderTest = new DecoratedRoomWithSwitch(new BedRoom());

        actualResult = classUnderTest.isLightOn();

        assertEquals("Wrong answer! ", expectedResult, actualResult);
}
```

Decorator – new sub - class

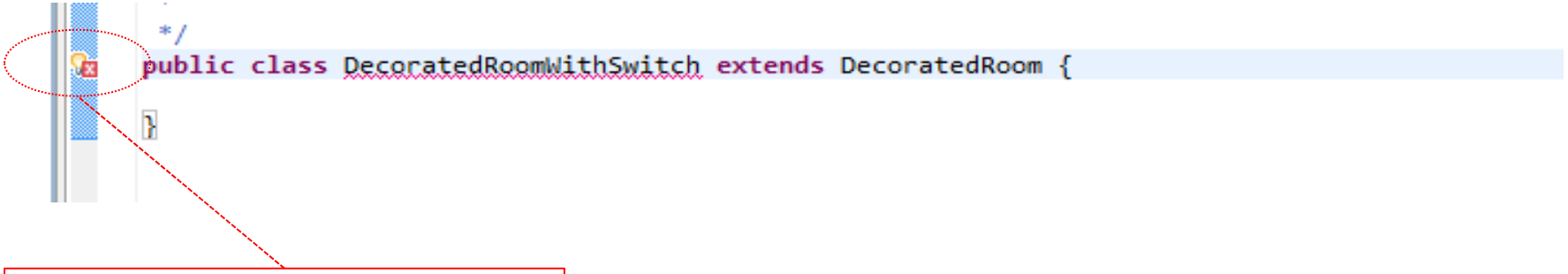
1.Ensure

2.Ensure

3.Ensure



Decorator – fixing code



1. Use to create constructor

2. Use Test code to create missing method

3. Run test if it fails properly, then commit

Decorator – code for class with switch

```
public class DecoratedRoomWithSwitch extends DecoratedRoom {

private String isLO;

public DecoratedRoomWithSwitch(Room component) {
          super(component);
           isLO = "yes";
          }

public String isLightOn() {
          return isLO;
          }
}
```

1. Run test. If passes like it should, then commit