**JUnit&Exception Guide** 陳振炎 2019.03.29

**This document gives an example of Java exception propagation, and the JUnit test for it.**

Double click on Eclipse icon. Click OK on workspace.

On upper left corner, click File, move to New, and select Others. Click Java Project. Click Next. For Project Name, type “p”. Then, click Finish.

Open Perspective? Click Yes.

Click “p” in project explorer on upper left corner. Click File, move to New, and select Class. For package, type “p1”. For Name, type “Main”. Then click Finish.

Copy the below to it:

**package** p1;

**public** **class** Main {

**public** **static** **void** main (String[] args) {

C c= **new** C();

**for** (**int** i=0; i<4; i++) {

**try** {

**boolean** b = c.m(i);

System.***out***.print ("No error. b is ");

System.***out***.println(b?"true":"false");

}

**catch** (Exceptions1 e1) {

System.***out***.print(e1.toString());

System.***out***.println(" 發生異常一");

}

**catch** (Exceptions2 e2) {

System.***out***.print(e2.toString());

System.***out***.println(" 發生異常二");

}

}// end for

}// end main()

}//end Main class

Click “p” in project explorer on upper left corner. Click File, move to New, and select Class. For package, type “p1”. For Name, type “C”. Then click Finish.

Copy the below to it:

**package** p1;

**public** **class** C {

**public** C() { }

**public** **boolean** m (**int** i)**throws** Exceptions1,Exceptions2{

**switch**(i) {

**case** 0: **return** **true**;

**case** 1: **throw** **new** Exceptions1();

**case** 2: **throw** **new** Exceptions2();

**default**:**return** **false**;

}

}

}

Similarly, create two exception files “Exceptions1.java” and “Exceptions2.java” as below:

**package** p1;

**public** **class** Exceptions1 **extends** Exception { }

**package** p1;

**public** **class** Exceptions2 **extends** Exception { }

Let us run this main(). And you will see the output below:

No error. b is true

p1.Exceptions1 發生異常一

p1.Exceptions2 發生異常二

No error. b is false

We have now entered and run the Java code. Next, let us enter JUnit unit test for it.

Click File, move to New, and select “JUnit test case”. For name, type “TestM”. Then click Finish. Copy the below:

package p1;

import static org.junit.Assert.\*;

import org.junit.Test;

public class TestM {

@Test

public void testM0()throws Exceptions1,Exceptions2{

C c = new C(); boolean b=c.m(0);

assertEquals (b, true);

}

@Test (expected = Exceptions1.class)

public void testM1()throws Exceptions1,Exceptions2{

C c = new C(); boolean b=c.m(1);

}

@Test (expected = Exceptions2.class)

public void testM2()throws Exceptions1,Exceptions2{

C c = new C(); boolean b=c.m(2);

}

@Test

public void testM3()throws Exceptions1,Exceptions2{

C c = new C(); boolean b=c.m(3);

assertEquals (b, false);

}

}

Click Run on tool bar. And, Select Run.

You will see a green line with “Run 4/4 Error 0” Wonderful!

**Exercise:** Modify the above program as follows. In method “m()” in class C, when “i” equals 2, return true instead of throwing an Exceptions2 object. And thus, remove Exceptions2.