

ACCESS MODIFIERS

ACCESS MODIFIERS IN JAVA

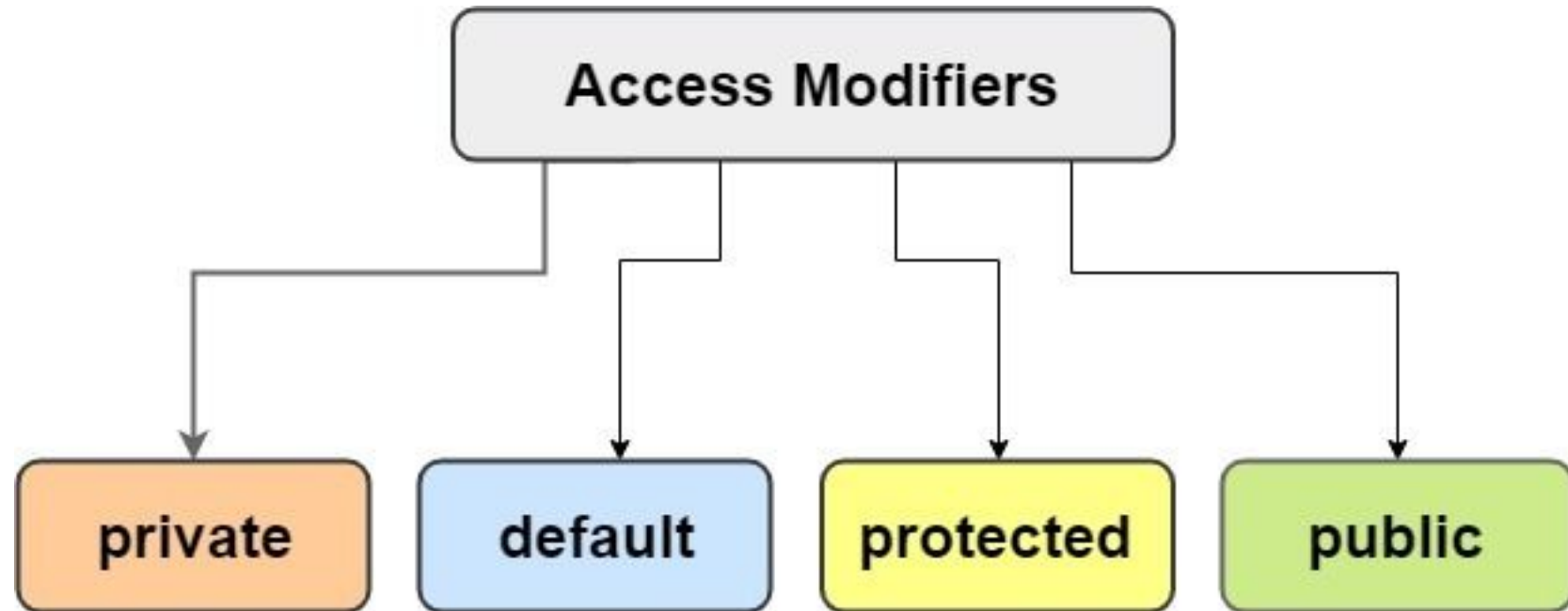
Access modifiers in java specify the scope of a class, constructor , variable , method or data member.
There are four types of access modifiers available in java:

Private

Default – *No keyword required*

Protected

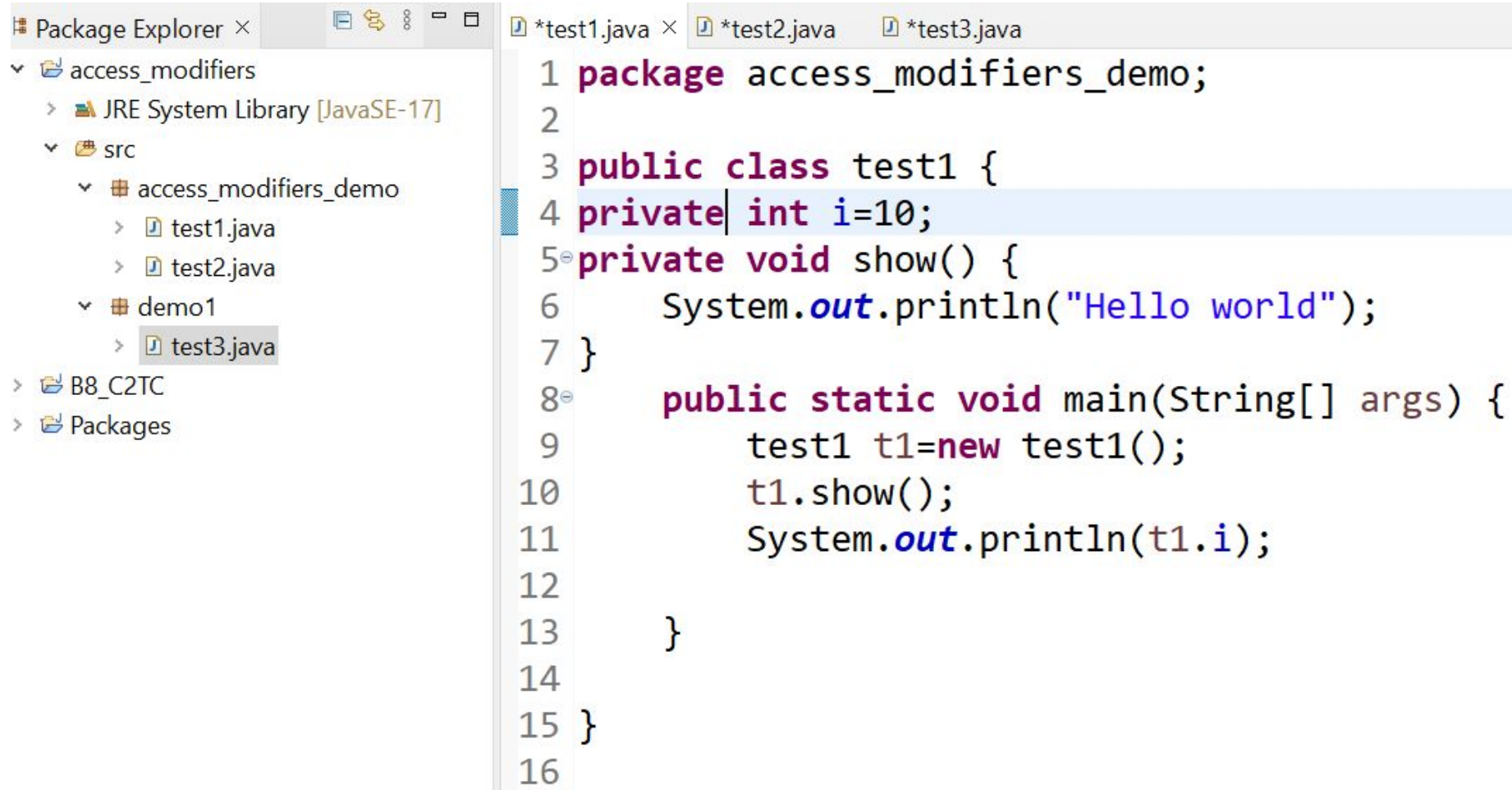
Public



Understanding all Access Modifiers Accessibility using Table

<i>Access Modifier</i>	within class	within package	outside package by subclass only	outside package
<i>Private</i>	Y	N	N	N
<i>Default</i>	Y	Y	N	N
<i>Protected</i>	Y	Y	Y	N
<i>Public</i>	Y	Y	Y	Y

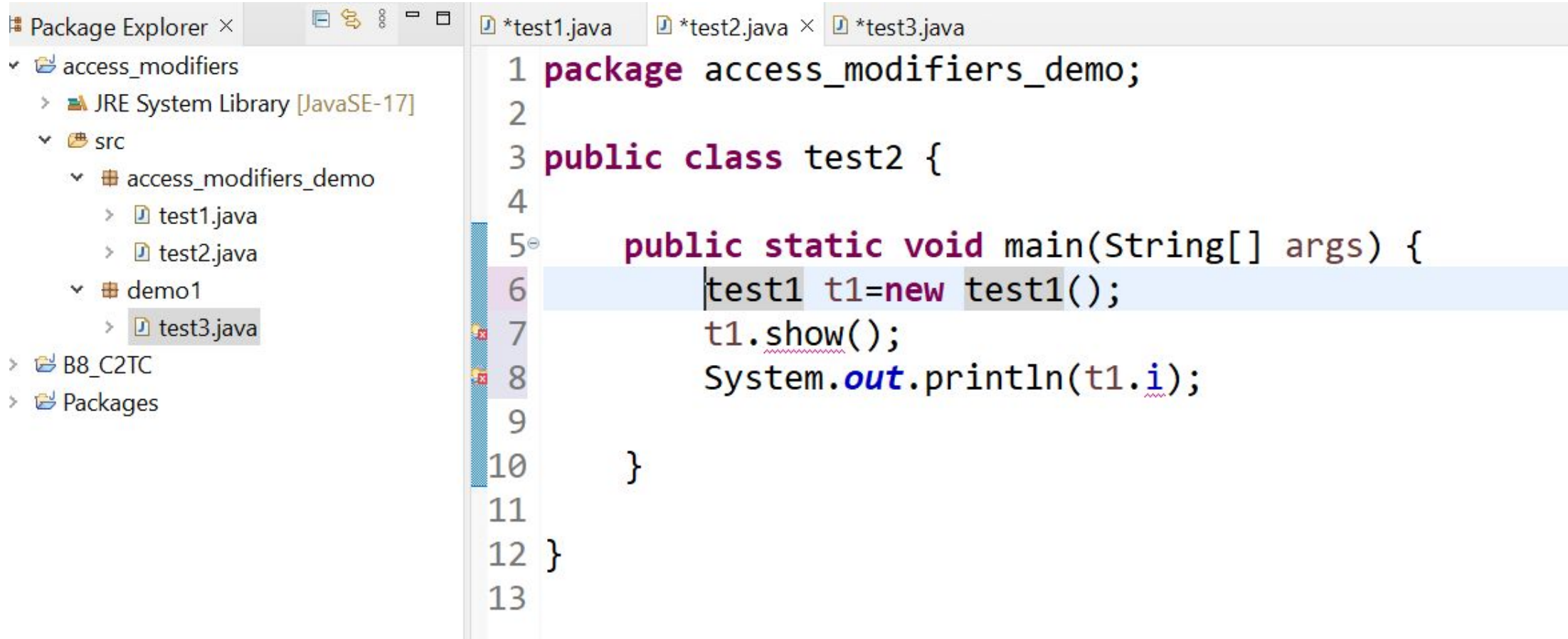
PRIVATE ACCESS MODIFIER - WITHIN CLASS



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer shows a project named 'access_modifiers' with a source folder 'src' containing a package 'access_modifiers_demo' with files 'test1.java', 'test2.java', and 'test3.java'. The code editor shows the content of 'test1.java'.

```
1 package access_modifiers_demo;
2
3 public class test1 {
4     private int i=10;
5     private void show() {
6         System.out.println("Hello world");
7     }
8     public static void main(String[] args) {
9         test1 t1=new test1();
10        t1.show();
11        System.out.println(t1.i);
12    }
13 }
14
15 }
16
```

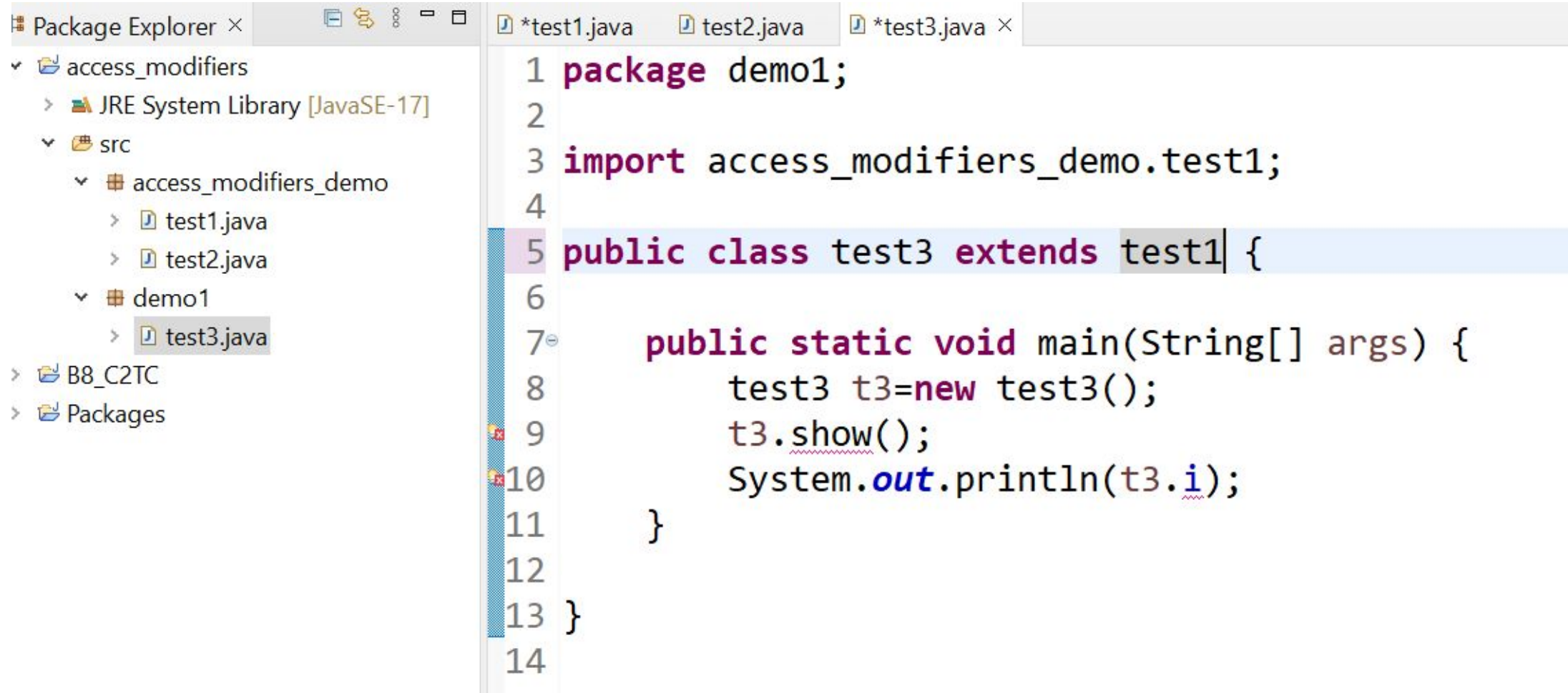
PRIVATE ACCESS MODIFIER - WITHIN PACKAGE



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project named 'access_modifiers' with a source folder 'src'. Inside 'src', there is a package 'access_modifiers_demo' containing three Java files: 'test1.java', 'test2.java', and 'test3.java'. There is also a package 'demo1' containing 'test3.java'. The code editor shows the content of 'test2.java'.

```
1 package access_modifiers_demo;
2
3 public class test2 {
4
5     public static void main(String[] args) {
6         test1 t1=new test1();
7         t1.show();
8         System.out.println(t1.i);
9
10    }
11
12 }
13
```

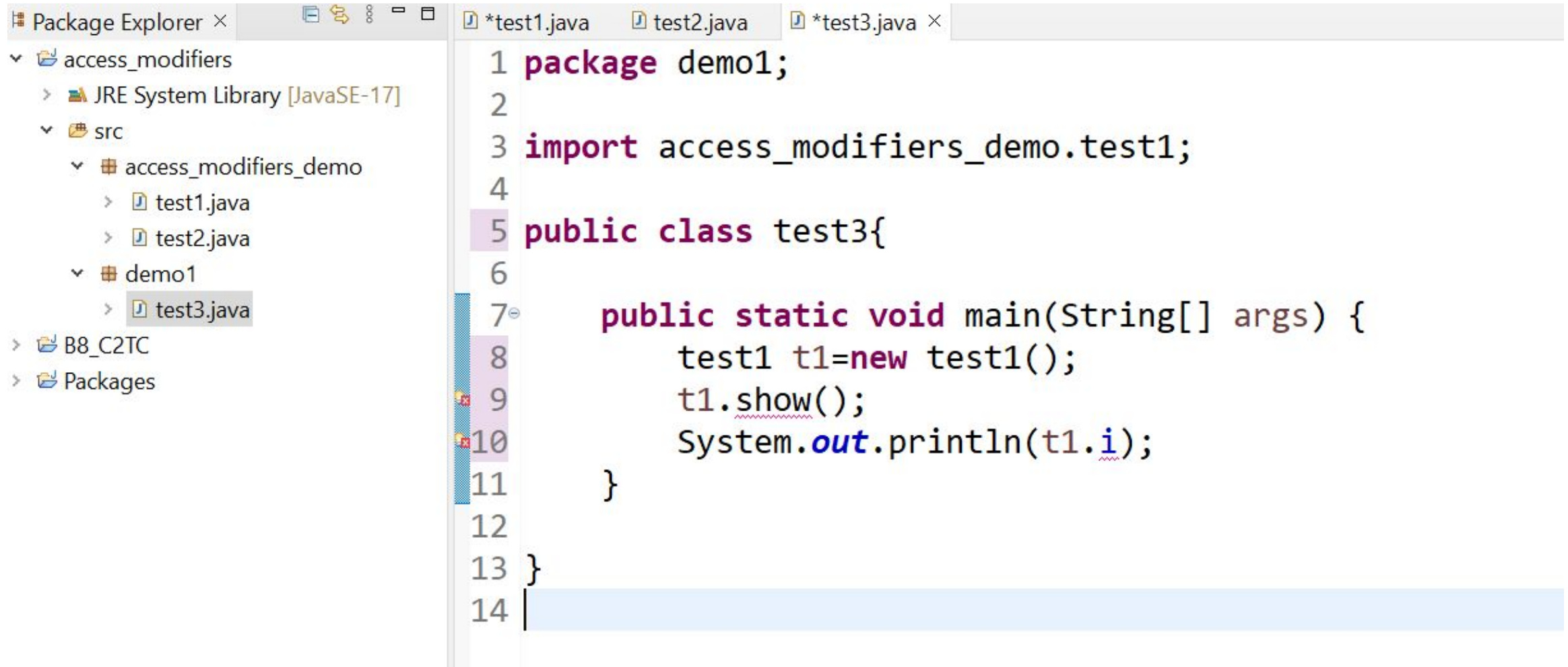
PRIVATE ACCESS MODIFIER - OUTSIDE PACKAGE BY SUBCLASS ONLY



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project named 'access_modifiers' with a source folder 'src'. Inside 'src', there is a package 'access_modifiers_demo' containing 'test1.java' and 'test2.java', and another package 'demo1' containing 'test3.java'. The code editor shows the content of 'test3.java'.

```
1 package demo1;
2
3 import access_modifiers_demo.test1;
4
5 public class test3 extends test1 {
6
7     public static void main(String[] args) {
8         test3 t3=new test3();
9         t3.show();
10        System.out.println(t3.i);
11    }
12
13 }
14
```

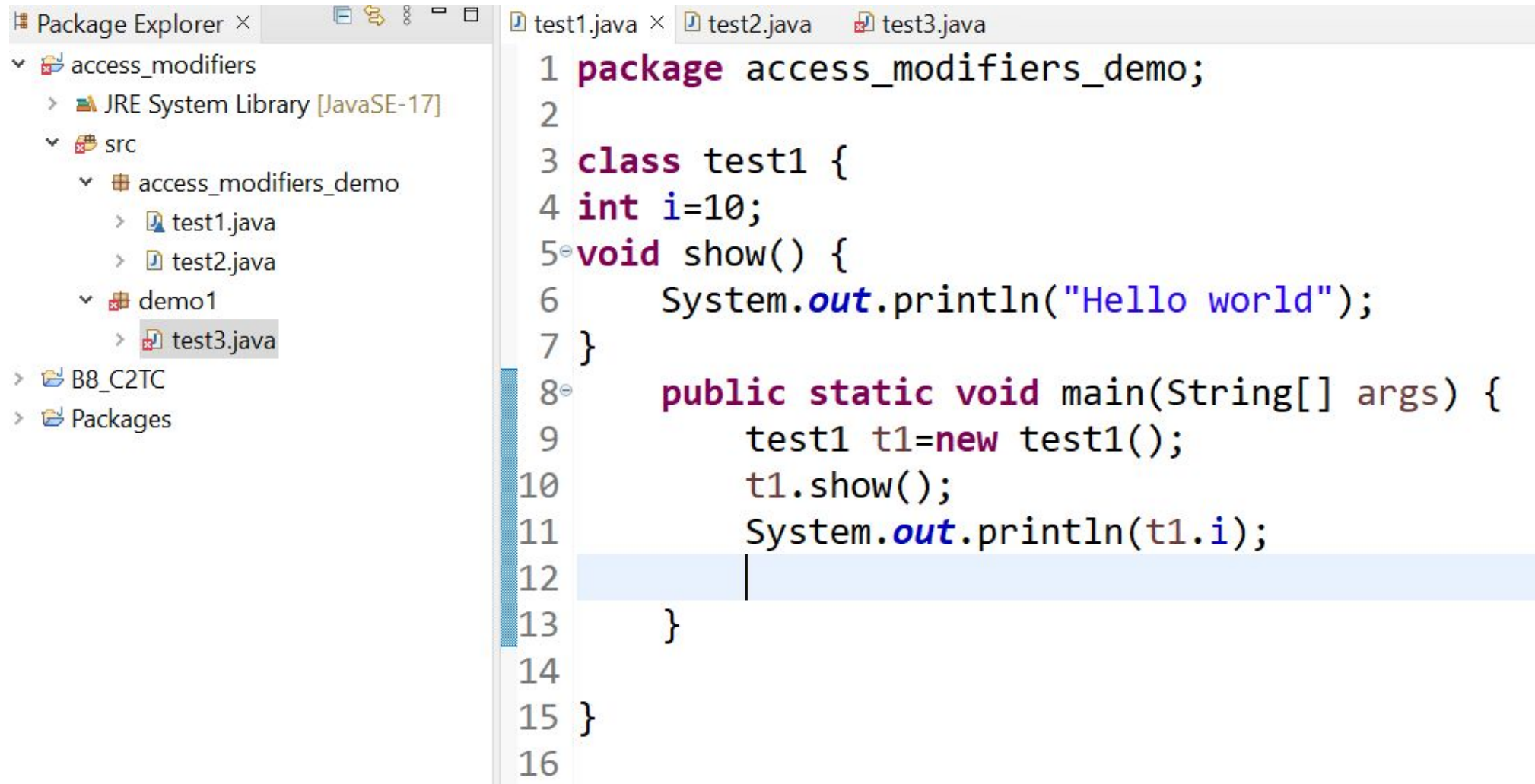
PRIVATE ACCESS MODIFIER - OUTSIDE PACKAGE



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project named 'access_modifiers' with a source folder 'src'. Inside 'src', there is a package 'access_modifiers_demo' containing 'test1.java' and 'test2.java', and another package 'demo1' containing 'test3.java'. The code editor shows the content of 'test3.java'.

```
1 package demo1;
2
3 import access_modifiers_demo.test1;
4
5 public class test3{
6
7     public static void main(String[] args) {
8         test1 t1=new test1();
9         t1.show();
10        System.out.println(t1.i);
11    }
12
13 }
14
```

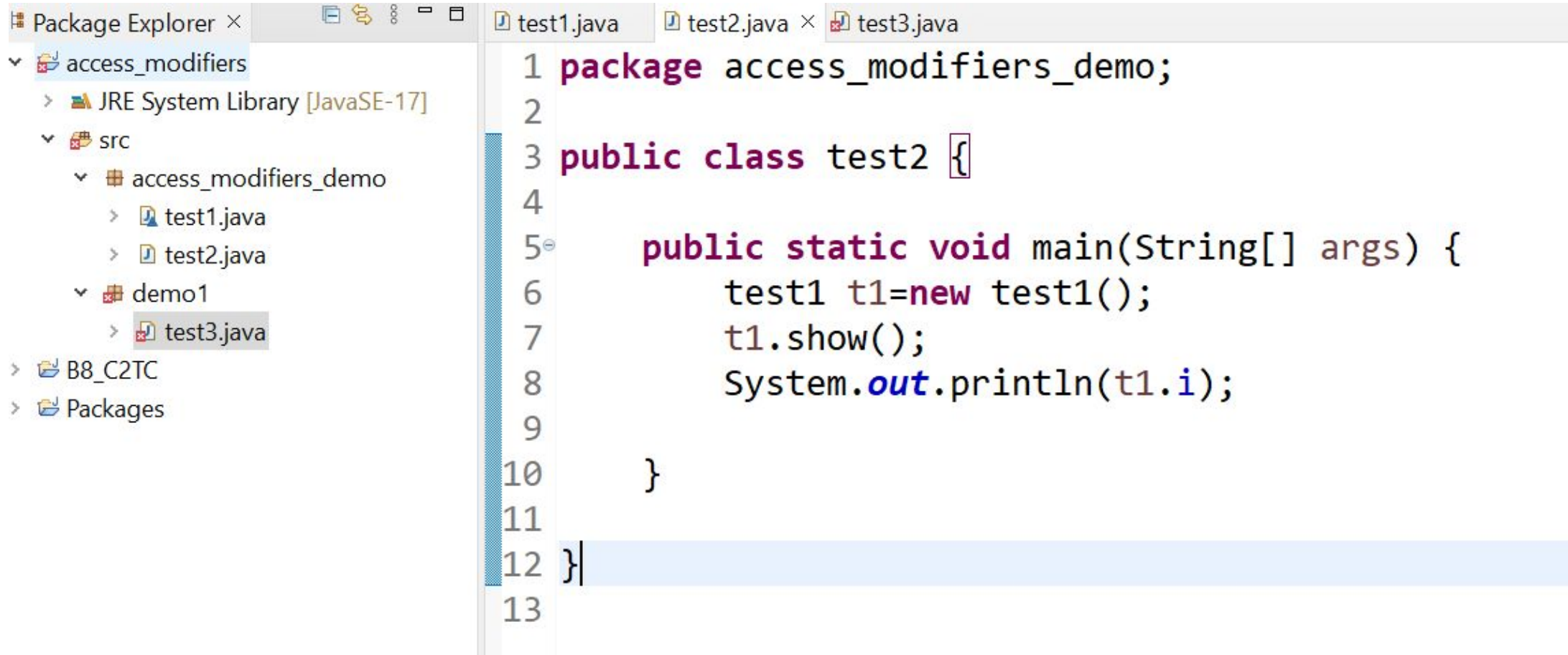

DEFAULT ACCESS MODIFIER - WITHIN CLASS



The screenshot displays an IDE interface. On the left, the Package Explorer shows a project named 'access_modifiers' with a source folder 'src'. Inside 'src', there is a package 'access_modifiers_demo' containing 'test1.java' and 'test2.java', and another package 'demo1' containing 'test3.java'. The main editor area shows the code for 'test1.java'.

```
1 package access_modifiers_demo;
2
3 class test1 {
4     int i=10;
5     void show() {
6         System.out.println("Hello world");
7     }
8     public static void main(String[] args) {
9         test1 t1=new test1();
10        t1.show();
11        System.out.println(t1.i);
12    }
13 }
14
15 }
16
```

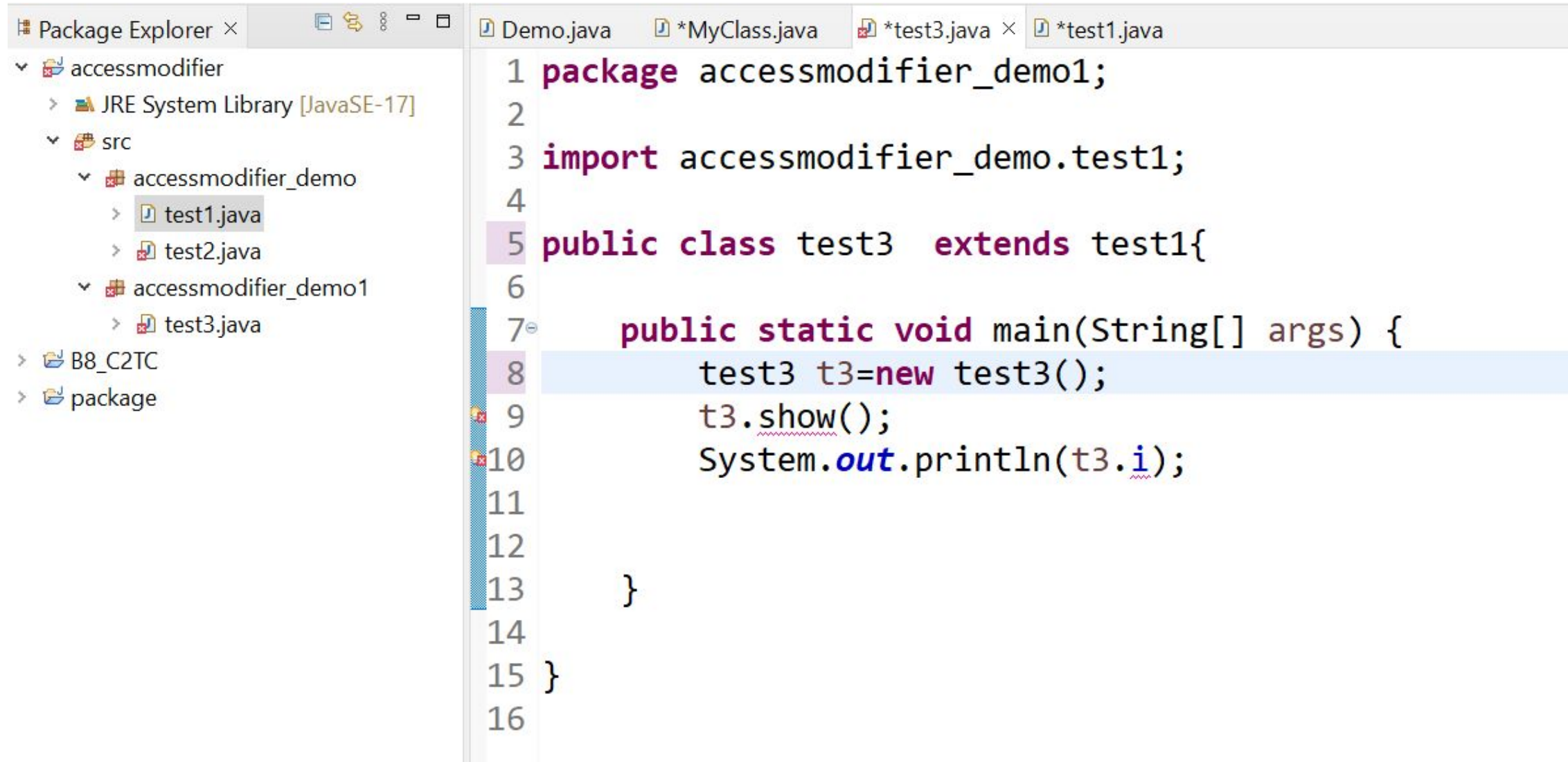

DEFAULT ACCESS MODIFIER - WITHIN PACKAGE



The screenshot displays an IDE interface. On the left, the Package Explorer shows a project named 'access_modifiers' under the 'B8_C2TC' workspace. Inside 'access_modifiers', there is a 'src' folder containing a package 'access_modifiers_demo'. This package contains three Java files: 'test1.java', 'test2.java', and 'test3.java'. The 'test2.java' file is currently selected and its content is shown in the editor on the right.

```
1 package access_modifiers_demo;
2
3 public class test2 {
4
5     public static void main(String[] args) {
6         test1 t1=new test1();
7         t1.show();
8         System.out.println(t1.i);
9
10    }
11
12 }|
13
```

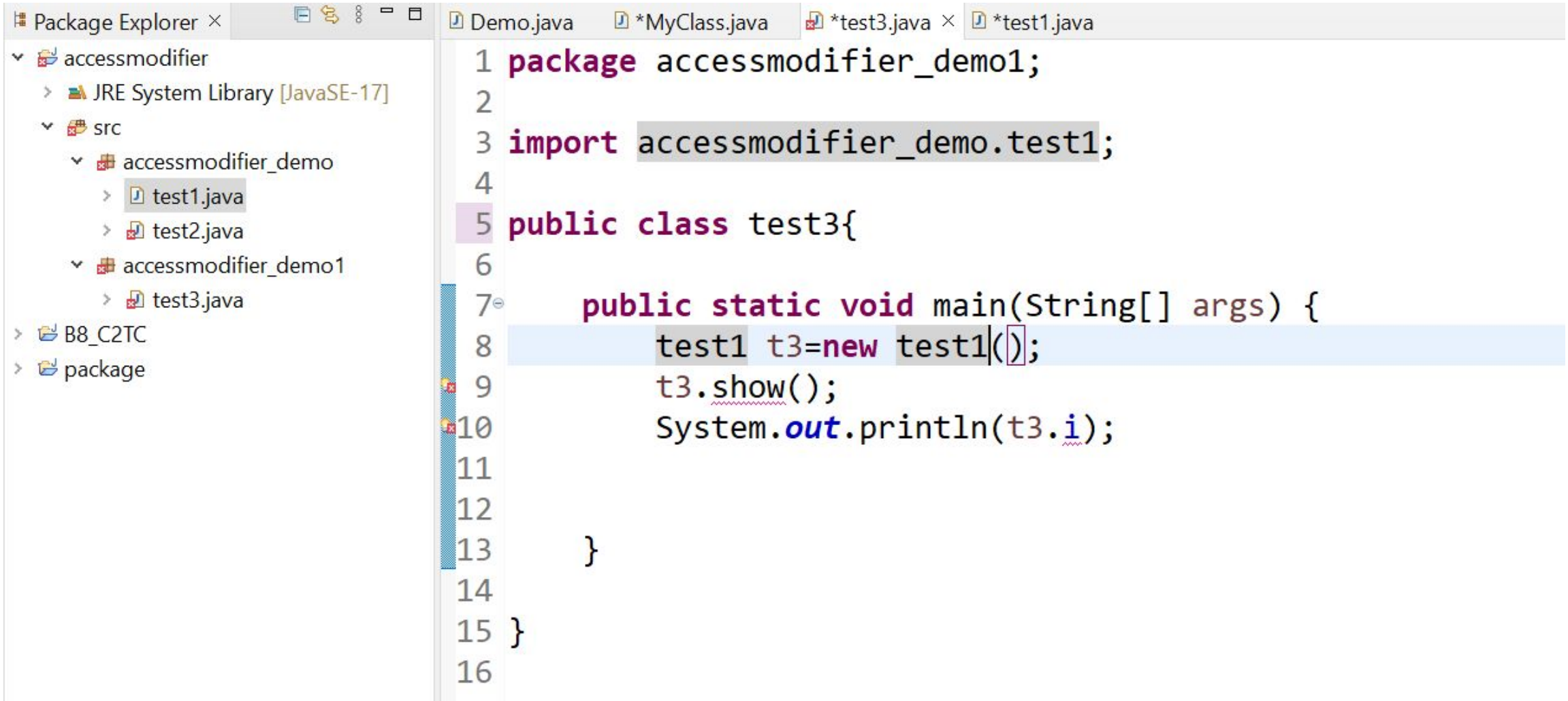
DEFAULT ACCESS MODIFIER - OUTSIDE PACKAGE BY SUBCLASS ONLY



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer shows a project named 'accessmodifier' with a source folder 'src'. Inside 'src', there are two packages: 'accessmodifier_demo' and 'accessmodifier_demo1'. The 'accessmodifier_demo' package contains 'test1.java' and 'test2.java'. The 'accessmodifier_demo1' package contains 'test3.java'. The code editor shows the content of 'test3.java'.

```
1 package accessmodifier_demo1;
2
3 import accessmodifier_demo.test1;
4
5 public class test3 extends test1{
6
7     public static void main(String[] args) {
8         test3 t3=new test3();
9         t3.show();
10        System.out.println(t3.i);
11
12    }
13
14 }
15 }
16
```

DEFAULT ACCESS MODIFIER - OUTSIDE PACKAGE



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer shows a project named 'accessmodifier' with a source folder 'src'. Inside 'src', there is a package 'accessmodifier_demo' containing files 'test1.java', 'test2.java', and 'accessmodifier_demo1'. The 'accessmodifier_demo1' package contains the file 'test3.java'. The code editor shows the content of 'test3.java'.

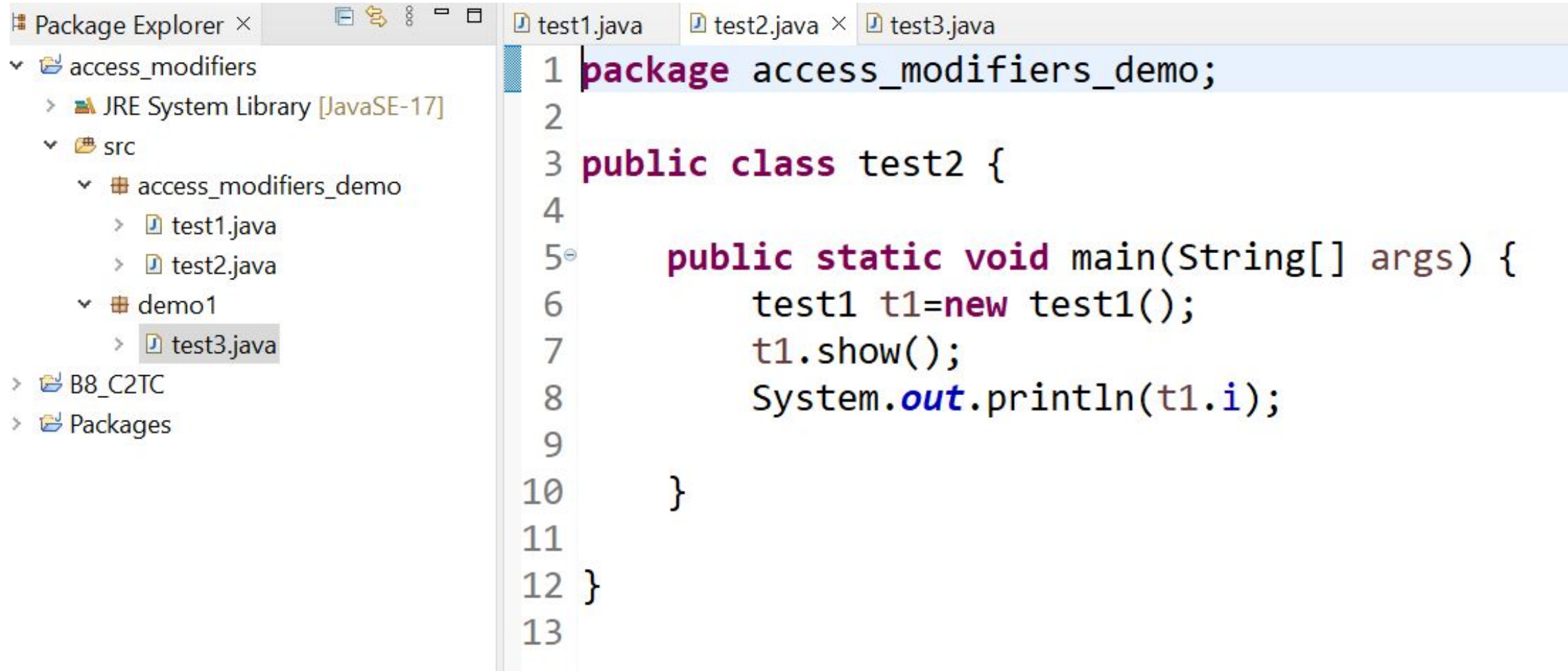
```
1 package accessmodifier_demo1;
2
3 import accessmodifier_demo.test1;
4
5 public class test3{
6
7     public static void main(String[] args) {
8         test1 t3=new test1();
9         t3.show();
10        System.out.println(t3.i);
11
12    }
13
14 }
15 }
16
```

PROTECTED ACCESS MODIFIER - WITHIN CLASS

The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project named 'access_modifiers' with a source folder 'src' containing a package 'access_modifiers_demo'. Inside this package, there are three Java files: 'test1.java', 'test2.java', and 'test3.java'. The 'test3.java' file is currently selected and open in the code editor. The code in 'test3.java' defines a package 'access_modifiers_demo', a public class 'test1', and a protected static method 'main'. The 'main' method creates an instance of 'test1' and calls its 'show' method, which prints 'Hello world'.

```
1 package access_modifiers_demo;
2
3 public class test1 {
4     protected int i=10;
5     protected void show() {
6         System.out.println("Hello world");
7     }
8     public static void main(String[] args) {
9         test1 t1=new test1();
10        t1.show();
11        System.out.println(t1.i);
12
13    }
14
15 }
16
```

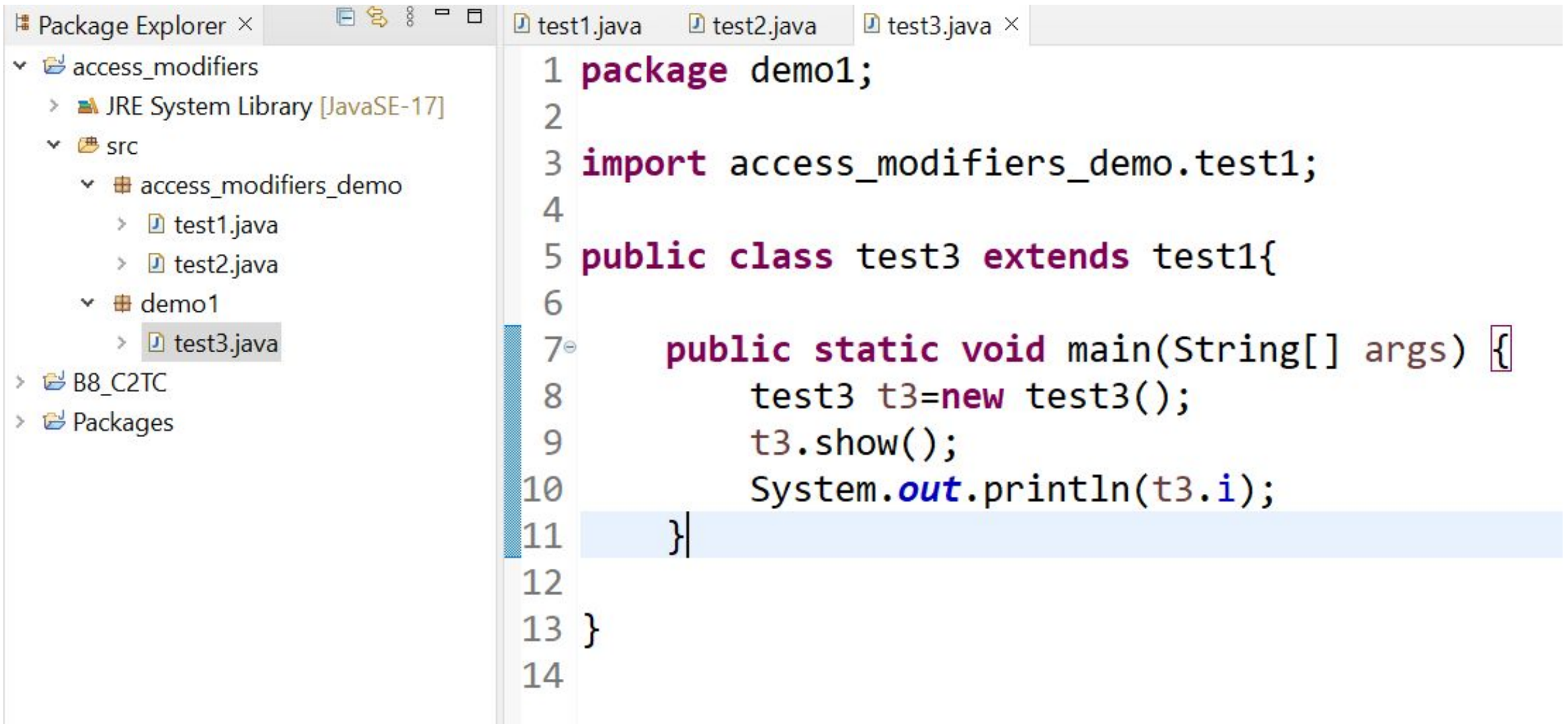

PROTECTED ACCESS MODIFIER - WITHIN PACKAGE



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project named 'access_modifiers' with a source folder 'src'. Inside 'src', there is a package 'access_modifiers_demo' containing three Java files: 'test1.java', 'test2.java', and 'test3.java'. The 'test3.java' file is selected. The code editor shows the following Java code:

```
1 package access_modifiers_demo;
2
3 public class test2 {
4
5     public static void main(String[] args) {
6         test1 t1=new test1();
7         t1.show();
8         System.out.println(t1.i);
9
10    }
11
12 }
13
```

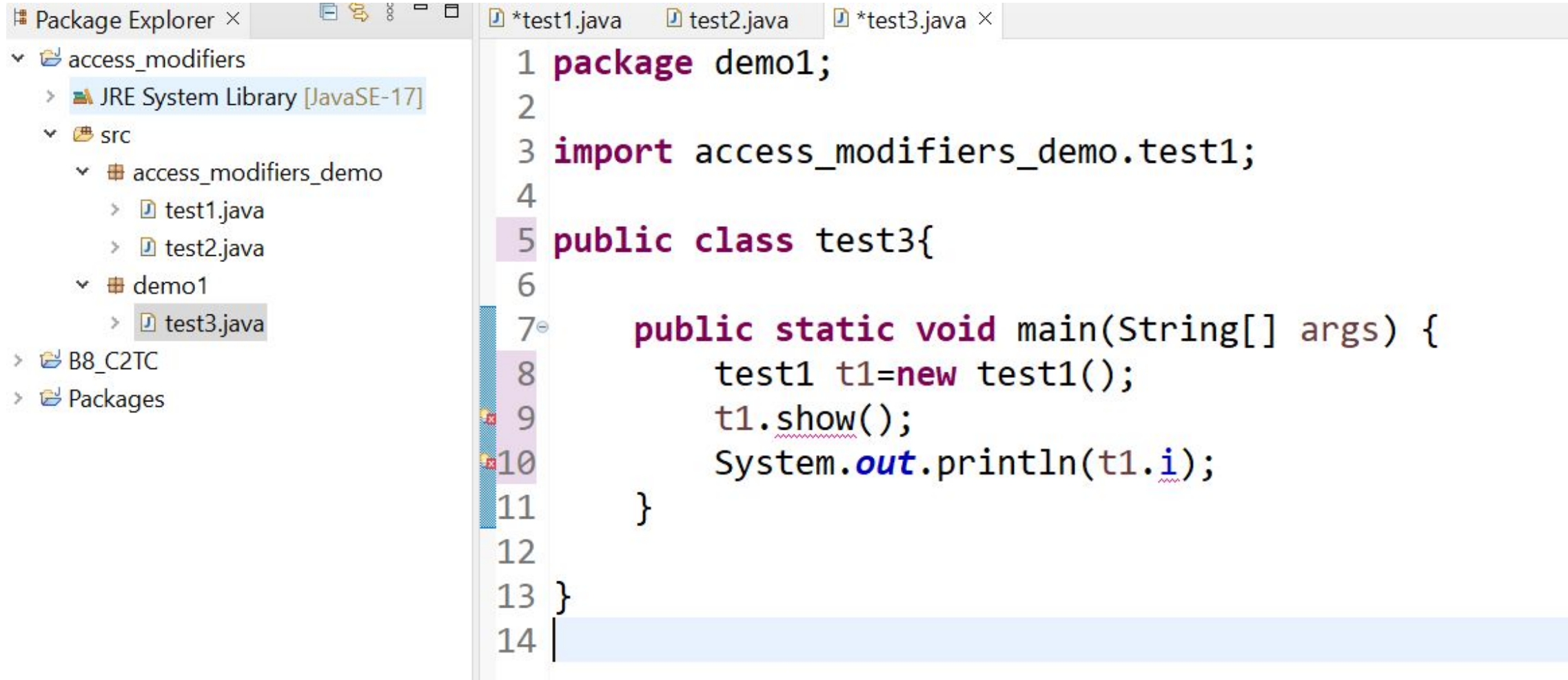
PROTECTED ACCESS MODIFIER - OUTSIDE PACKAGE BY SUBCLASS ONLY



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project named 'access_modifiers' with a source folder 'src'. Inside 'src', there is a package 'access_modifiers_demo' containing 'test1.java' and 'test2.java', and another package 'demo1' containing 'test3.java'. The code editor shows the content of 'test3.java'.

```
1 package demo1;
2
3 import access_modifiers_demo.test1;
4
5 public class test3 extends test1{
6
7     public static void main(String[] args) {
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9         t3.show();
10        System.out.println(t3.i);
11    }
12
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14
```

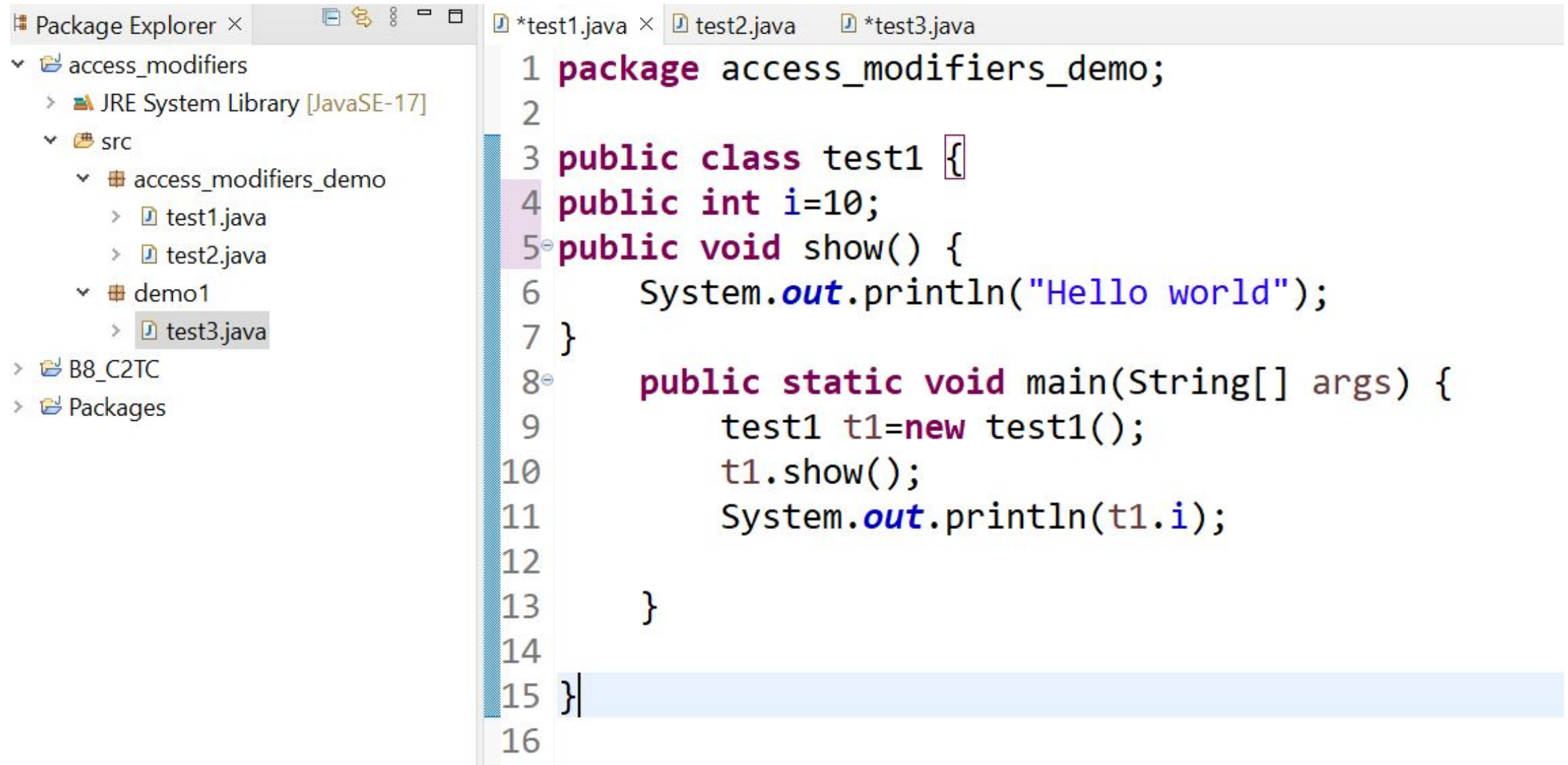
PROTECTED ACCESS MODIFIER - OUTSIDE PACKAGE



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```
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2
3 import access_modifiers_demo.test1;
4
5 public class test3{
6
7     public static void main(String[] args) {
8         test1 t1=new test1();
9         t1.show();
10        System.out.println(t1.i);
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```

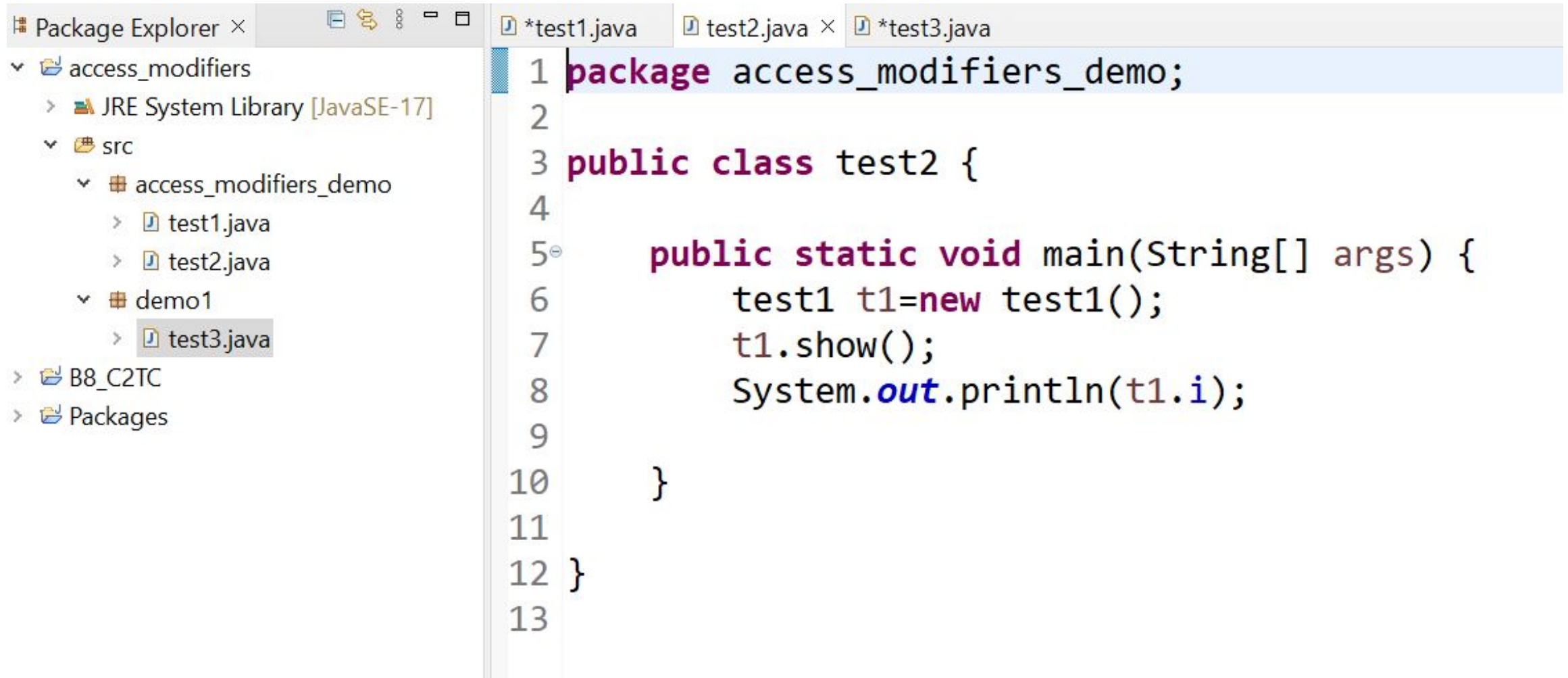

PUBLIC ACCESS MODIFIER - WITHIN CLASS



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer displays a project structure with a package named `access_modifiers_demo` containing three Java files: `test1.java`, `test2.java`, and `test3.java`. The code editor shows the content of `test1.java`, which is a Java class with a public access modifier. The code is as follows:

```
1 package access_modifiers_demo;
2
3 public class test1 {
4     public int i=10;
5     public void show() {
6         System.out.println("Hello world");
7     }
8     public static void main(String[] args) {
9         test1 t1=new test1();
10        t1.show();
11        System.out.println(t1.i);
12    }
13 }
14
15 }
16
```

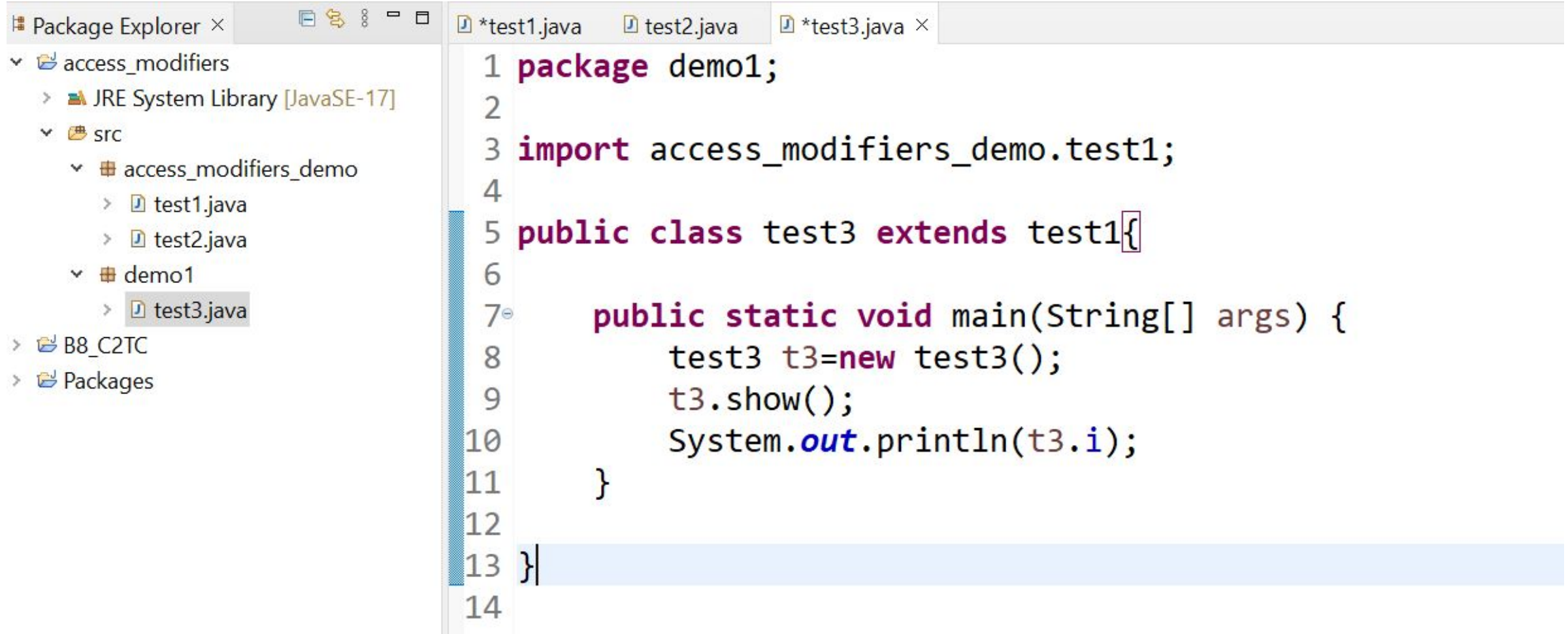
PUBLIC ACCESS MODIFIER - WITHIN PACKAGE



The screenshot shows an IDE with a Package Explorer on the left and a code editor on the right. The Package Explorer shows a project named 'access_modifiers' with a source folder 'src' containing a package 'access_modifiers_demo'. Inside this package, there are three Java files: 'test1.java', 'test2.java', and 'test3.java'. The code editor displays the content of 'test1.java', which defines a package, a public class 'test2', and a public static main method that creates an instance of 'test1' and prints its 'i' attribute.

```
1 package access_modifiers_demo;
2
3 public class test2 {
4
5     public static void main(String[] args) {
6         test1 t1=new test1();
7         t1.show();
8         System.out.println(t1.i);
9
10    }
11
12 }
13
```

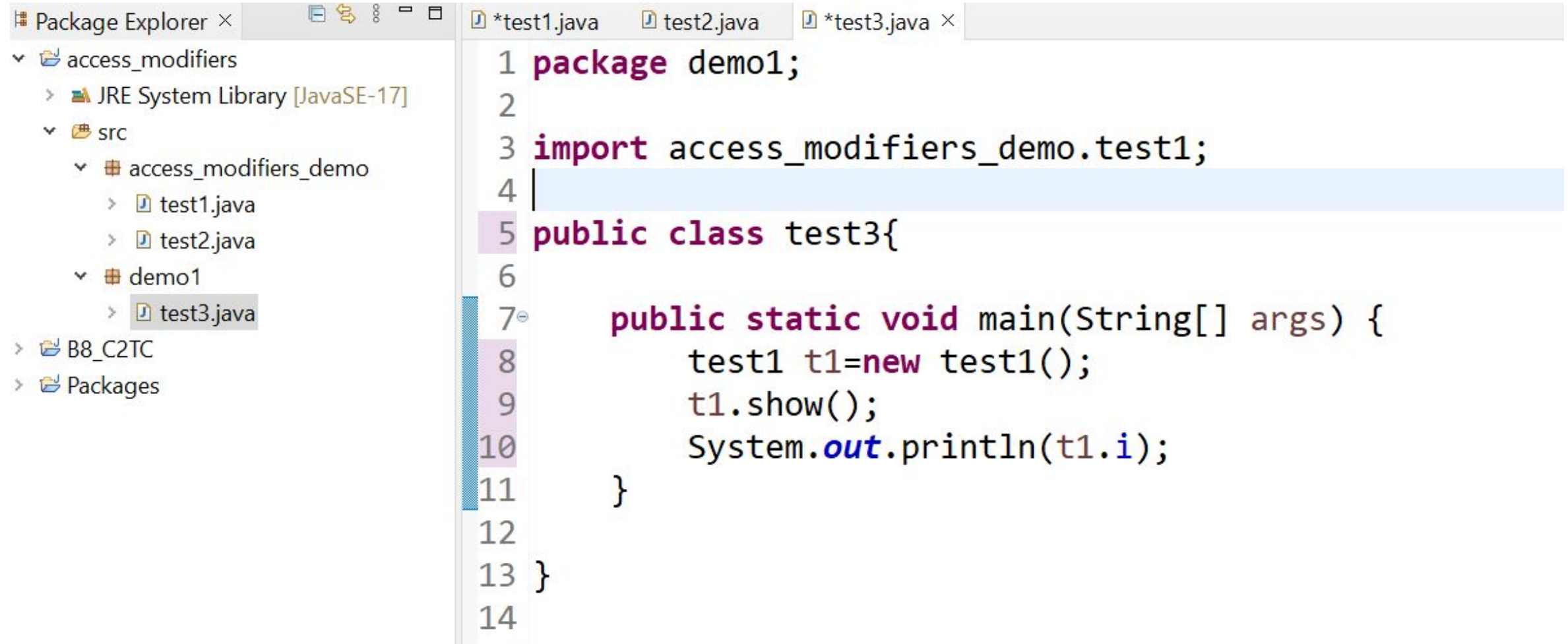
PUBLIC ACCESS MODIFIER - OUTSIDE PACKAGE BY SUBCLASS ONLY



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```
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2
3 import access_modifiers_demo.test1;
4
5 public class test3 extends test1{
6
7     public static void main(String[] args) {
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12
13 }
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```

PUBLIC ACCESS MODIFIER - OUTSIDE PACKAGE



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2
3 import access_modifiers_demo.test1;
4
5 public class test3{
6
7     public static void main(String[] args) {
8         test1 t1=new test1();
9         t1.show();
10        System.out.println(t1.i);
11    }
12
13 }
14
```