

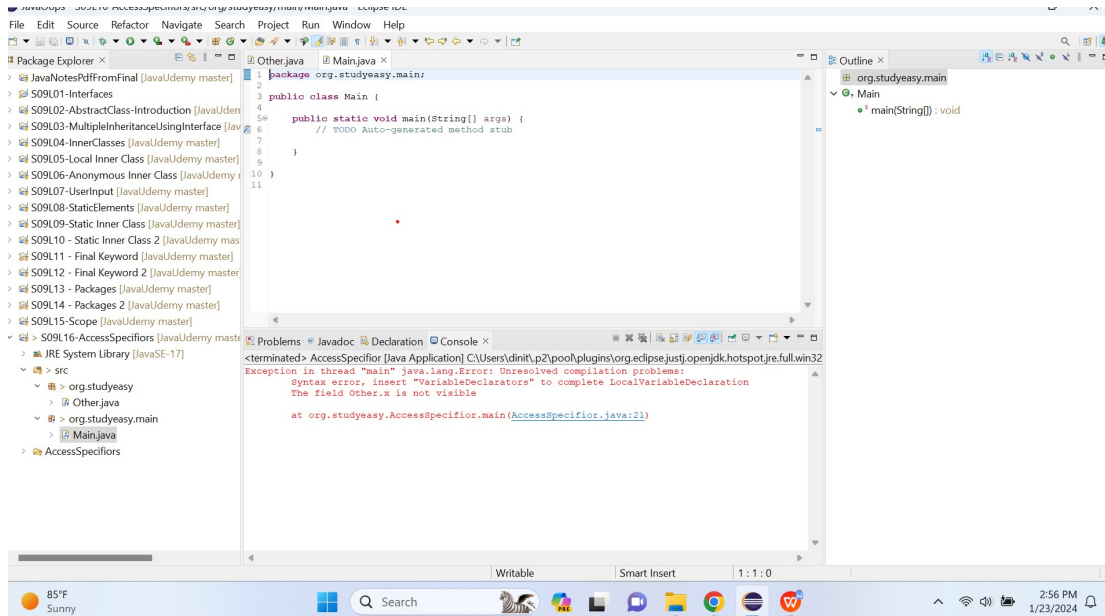
ACCESS SPECIFIORS/ACCESS MODIFIERS/SCOPE SPECIFIORS

Modifier	Description
private	Element accessible only within class.
default/ no modifier	No modifier is treated as default modifier. The default modifier is accessible only within package.
protected	Protected modifier is accessible both within and outside the package but through inheritance only.
public	The public modifier is accessible everywhere. It has the widest scope among all other modifiers.

	default	private	protected	public
Same Class	Yes	Yes	Yes	Yes
Same package subclass	Yes	No	Yes	Yes
Same package non-subclass	Yes	No	Yes	Yes
Different package subclass	No	No	Yes	Yes
Different package non-subclass	No	No	No	Yes

Access modifiers in Java without inheritance

OtherClass.java



Unresolved Compilation Error - Different Package



Solution:

```
1 package org.studyeasy;
2
3 public class Other {
4     // Default (package-private) field x
5     public int x = 10;
6 }
7
```

Make the variable as public, then you get output as 10.

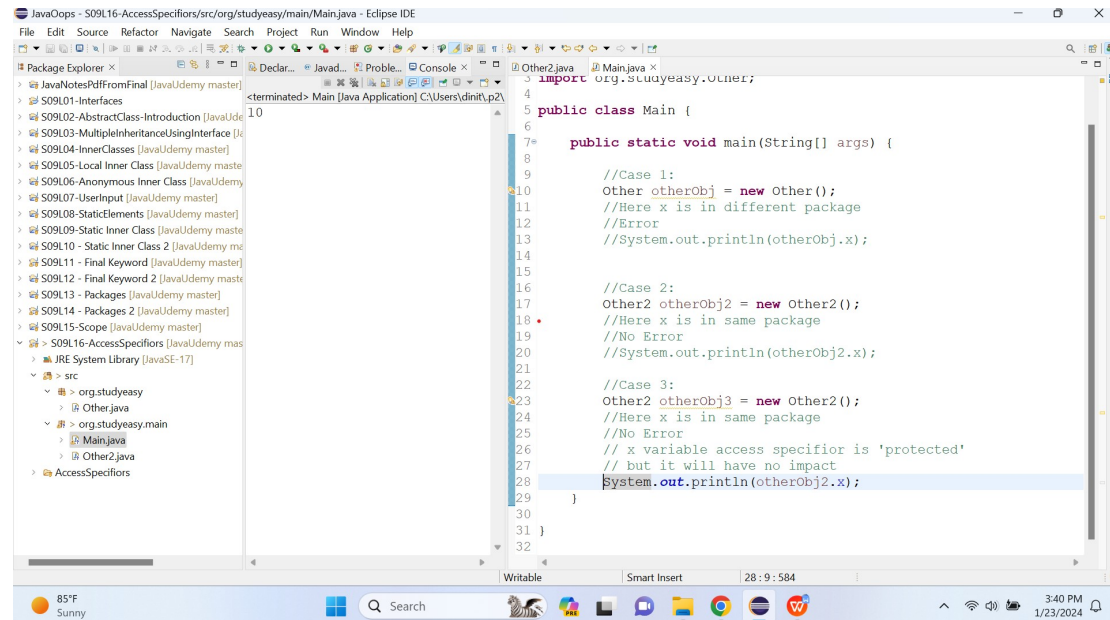
Unresolved Compilation Error - Same Package

You get output as 10.

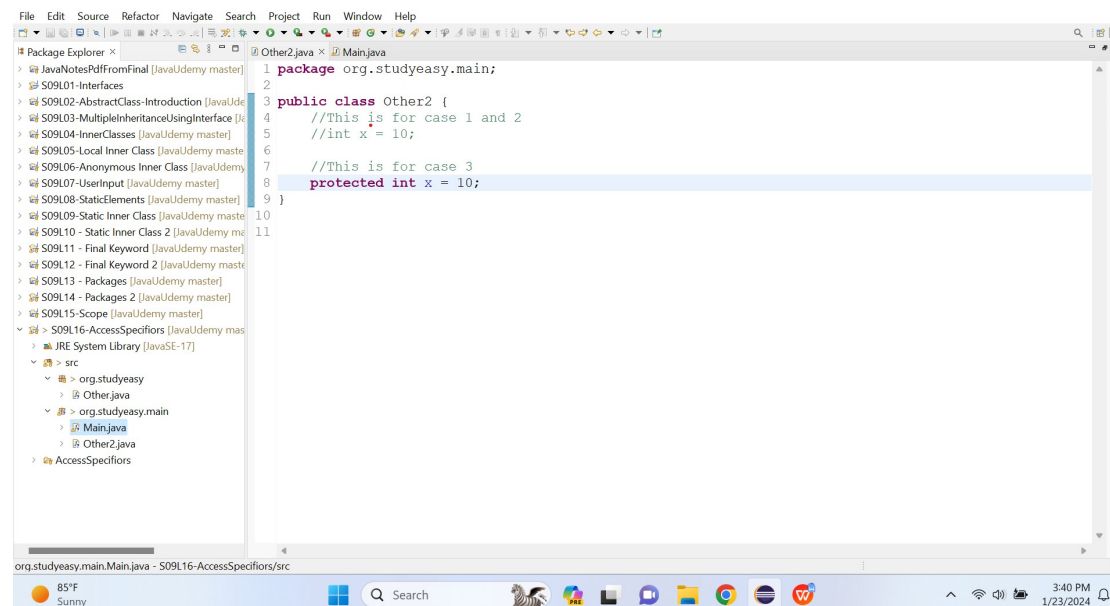
```
1 package org.studyeasy.main;
2
3 import org.studyeasy.Other;
4
5 public class Main {
6
7     public static void main(String[] args) {
8
9         //Case 1:
10        Other otherObj = new Other();
11        //Here x is in different package
12        //Error
13        System.out.println(otherObj.x);
14
15        //Case 2:
16        Other2 otherObj2 = new Other2();
17        //Here x is in same package
18        //No Error
19        System.out.println(otherObj2.x);
20    }
21 }
22
23
24
```

```
1 package org.studyeasy.main;
2
3 public class Other2 {
4     int x = 10;
5 }
6
7
```

Unresolved Compilation Error - Same Package- Using Protected Access Specifier:

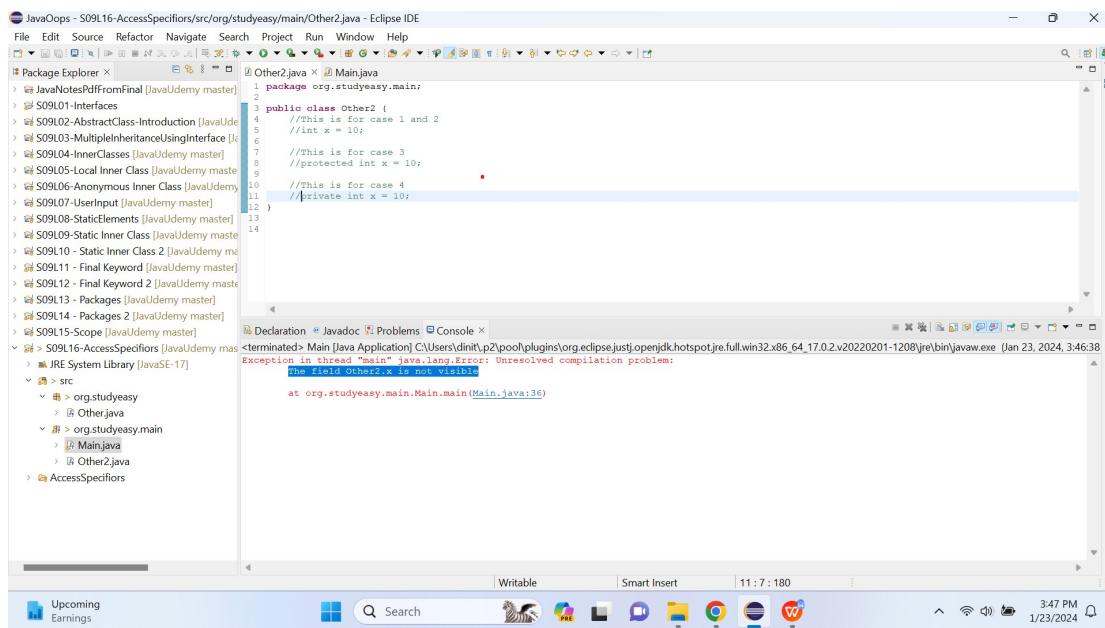
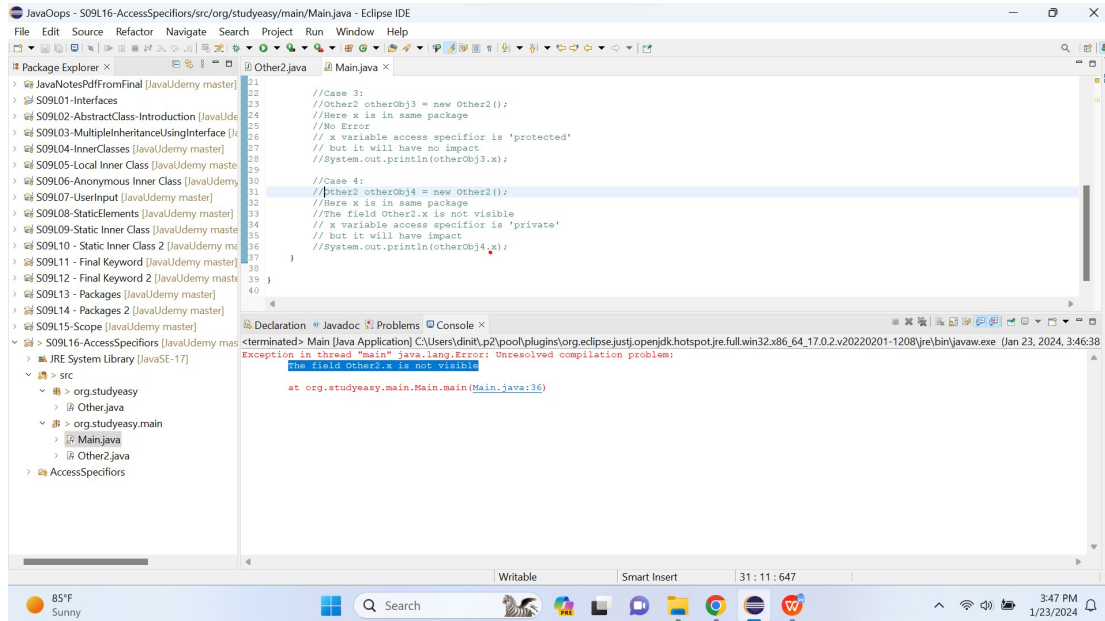


```
1 package org.studyeasy;
2
3 import org.studyeasy.other;
4
5 public class Main {
6
7     public static void main(String[] args) {
8
9         //Case 1:
10        Other otherObj = new Other();
11        //Here x is in different package
12        //Error
13        //System.out.println(otherObj.x);
14
15
16        //Case 2:
17        Other2 otherObj2 = new Other2();
18        //Here x is in same package
19        //No Error
20        //System.out.println(otherObj2.x);
21
22        //Case 3:
23        Other2 otherObj3 = new Other2();
24        //Here x is in same package
25        //No Error
26        // x variable access specifier is 'protected'
27        // but it will have no impact
28        System.out.println(otherObj2.x);
29
30    }
31 }
32
```

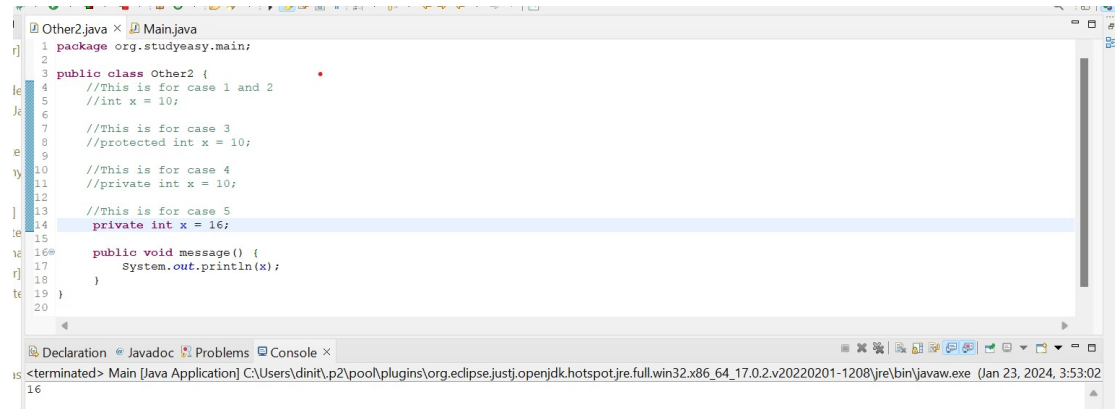
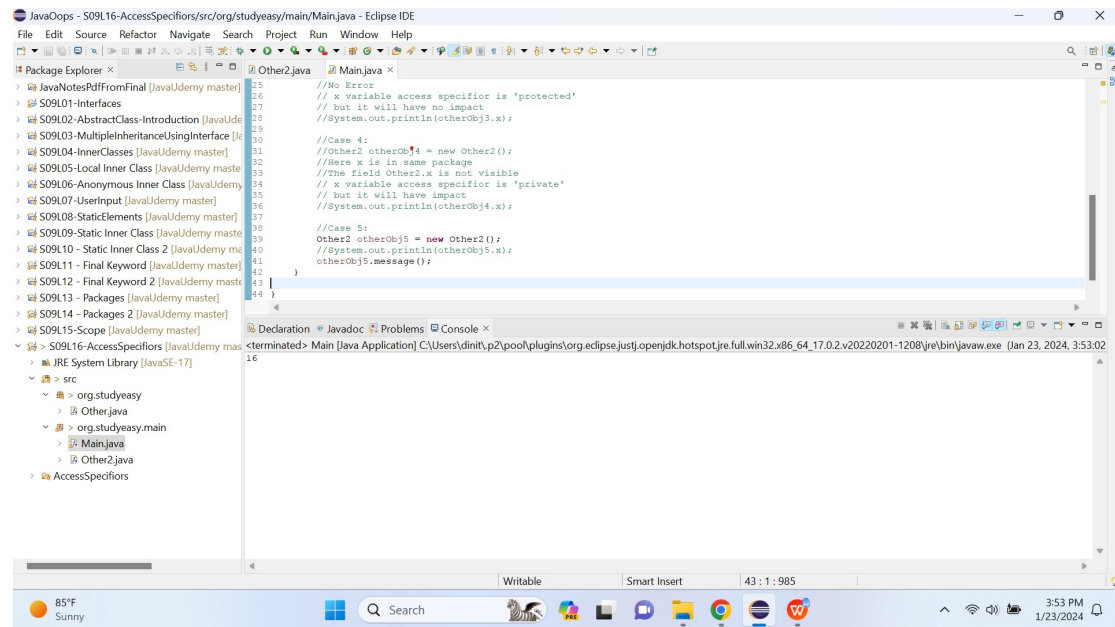


```
1 package org.studyeasy.main;
2
3 public class Other2 {
4     //This is for case 1 and 2
5     //int x = 10;
6
7     //This is for case 3
8     protected int x = 10;
9 }
10
11
```

Unresolved Compilation Error - Same Package- Using Private Access Specifier:



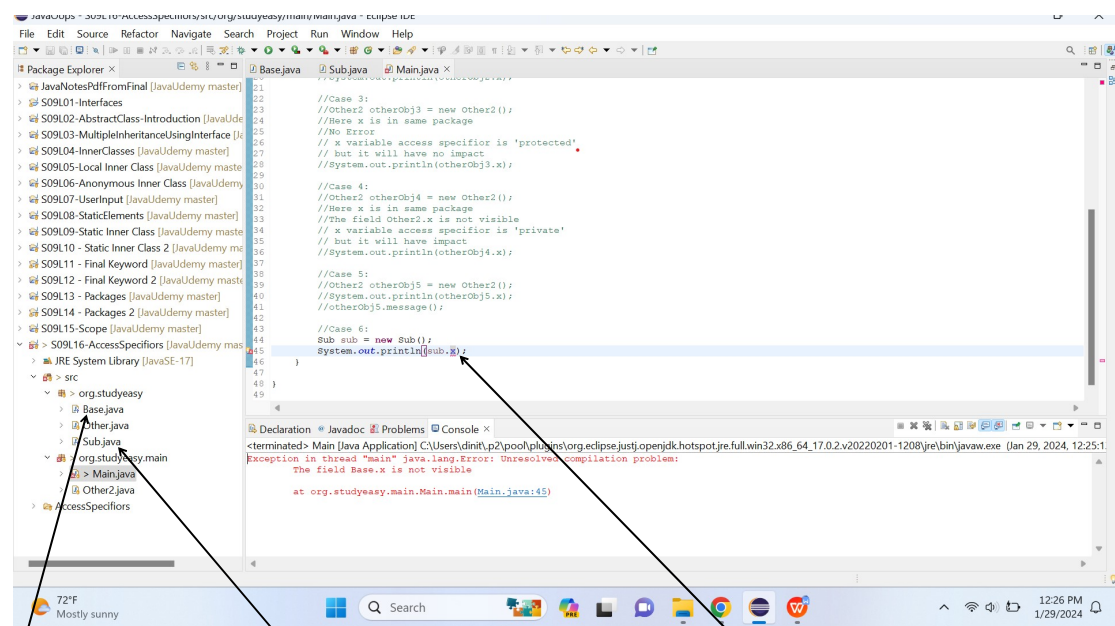
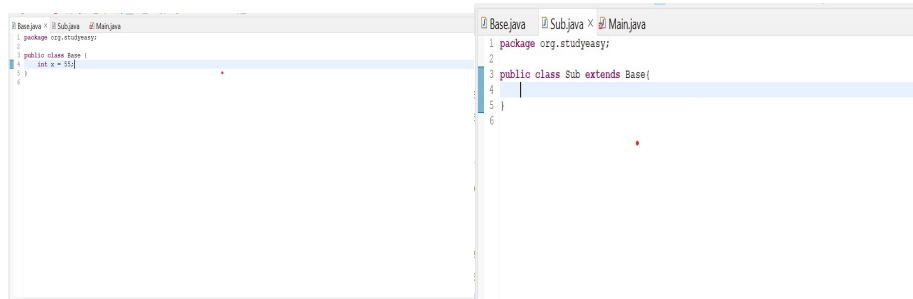
Unresolved Compilation Error - Same Package- Using Private Access Specifier - Calling Through a Method:



Unresolved Compilation Error - Inheritance Approach

Base.java

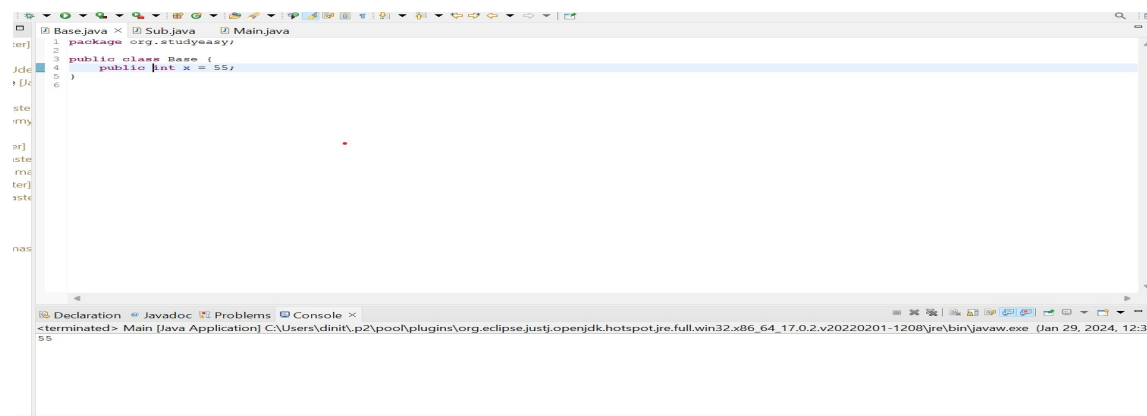
Sub.java

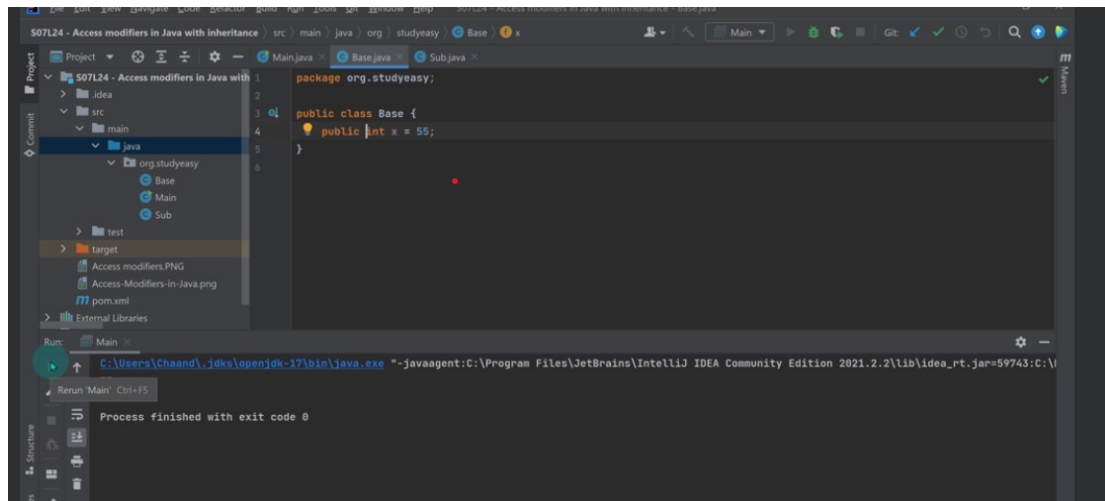


This is the Base Class

This is the Parent Class

Trying to access variable x from Parent Class Gives you error. So to access it make the Variable as public.





You can also bring Main.java in same package to get rid of the error.(Different IDE but same concept).
For both private and protected access specifiers.