

Course Name: A Level (2nd Sem)

Subject: JAVA

Topic: Access Modifier in java

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Access Modifiers in java

Java Modifiers are used to define access to various Java classes and objects, Java functions, and Java constructors. An access modifier **restricts** the access of a class, constructor, data member and method in another class. In java we have four access modifiers:

1. default
2. private
3. protected
4. Public

Default access modifier

When we do not mention any access modifier, it is called default access modifier. The scope of this modifier is limited to the package only. This means that if we have a class with the default access modifier in a package, only those classes that are in this package can access this class.

```
package p1;
public class Addition
{
    Int addTwoNumbers(int a, int b)
    {
        return a+b;
    }
}
```

```
//Main ,java
package p2;
import p1.*;
public class Main{
public static void main(String args[])
{
    Addition obj =new Addition();
    obj.addTwoNumbers(10,21);
}
}
```

Private access modifier

The scope of private modifier is limited to the class only.

1. Private Data members and methods are only accessible within the class
2. Class and Interface cannot be declared as private
3. If a class has private constructor then you cannot create the object of that class from outside of the class.

```
class ABC
{
    private double num = 100;
    private int square(int a)
    {
        return a*a;
    }
}
public class PP
{
    public static void main(String args[])
    {
        ABC obj = new ABC();
        System.out.println(obj.num);
        System.out.println(obj.square(10));
    }
}
```

3) protected access modifier

Protected data member and method are only accessible by the classes of the same package and the subclasses present in any package through inheritance only. The protected access modifier can be applied on the data member, method and constructor. It can't be applied on the class.

```
package A1;
public class Addition1
{
    protected int add(int a, int b)
    {
        return a+b;
    }
}
```

```

package B1;
import A1.*;
class Main1 extends Addition1
{
    public static void main(String args[])
    {
        Addition1 obj = new Addition1 ();
        System.out.println(obj.add(5, 7));
    }
}

```

4. Public access modifier

The members, methods and classes that are declared public can be accessed from anywhere. This modifier doesn't put any restriction on the access.

//Addition .java

```

package X;
public class Addition
{
    public int add(int a, int b)
    {
        return a+b;
    }
}

```

// Main2.java

```

package Y;
import X.*;
class Main2
{
    public static void main(String args[])
    {
        Addition obj = new Addition();
        System.out.println(obj.add(9, 8));
    }
}

```

Exercise:-

1-What is the use of private constructor in java?

2-Why is main method public in java?