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Java Programming

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Access Modifiers in Java

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Access Modifiers in Java

Access modifiers

- Access modifiers in java specifies accessibility (scope) of a data member, method, constructor or class.
- There are 4 types of java access modifiers:

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

1. private access modifier

- private access modifier is accessible only within class.
- Any other **class of same package will not be able to access** these members.
- Classes or interface can not be declared as private.

Example of private access modifiers

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

System.out.println(obj.square(10));
} }
```

2. Default access modifier

- When no access modifier is specified for a class , method or data member – It is said to be having the **default** access modifier by default.

Example of default access modifier

```
package p1;
class Demo1
{
    void display()
        {
            System.out.println("Hello World!");
        }
}
```

Contd….

```
package mypack;
import pack.*;
class B
{
```

Contd….

```
  public static void main(String args[]){
   A obj = new A();        //Compile Time Error
   obj.msg();              //Compile Time Error
  }
}
```

3. protected access modifier

- Accessible within package and outside the package but through inheritance only
- Can be applied on the data member, method and constructor.
- Can't be applied on the class

Example of protected access modifier

```
package pack;
public class A{
protected void msg()
{System.out.println("Hello");}

}
```

Example of protected access modifier

```
package mypack;
import pack.*;

class B extends A{
  public static void main(String args[]){
   B obj = new B();
   obj.msg();
  }
}
```

4. public access modifier

- public access modifier has the **widest scope** among all other access modifiers
- **accessible from every where** in the program.

Example for public access modifier

```
package pack;
public class A{
public void msg()
{System.out.println("Hello
");}
}
```

```
package mypack;
import pack.*;
class B{
  public static void main(S
tring args[]){
   A obj = new A();
   obj.msg();
  } }
```

Access modifiers by a simple table

Access Modifier	within class	within package	outside package by subclass only	outside package
Private	Y	N	N	N
Default	Y	Y	N	N
Protected	Y	Y	Y	N
Public	Y	Y	Y	Y