Module: Core Java

Session 7: Packages and Access Modifiers Practice

* This is a practice session; you will work on Packages and Access Modifiers assignments.
* You can discuss your doubts with the trainer

**Assignments:**

**Assignment 1 - Complete the below caselet to make it work.**

package com.ts.coe.accessspecifers.samepackage;

public class SameClass {

private String privateVariable = "private";

String defaultVariable = "default";

protected String proectedVariable = "protected";

public String publicVariable= "public";

public void display(){

System.out.println(privateVariable);

System.out.println(defaultVariable);

//Fill the following box to print protectedVariable

System.out.println(publicVariable);

}

}

package com.ts.coe.accessspecifers.samepackage;

public class SamePackageNonSubclass {

public void display(){

Write the output for each statement in the following Boxes

SameClass sameClass = new SameClass();

System.out.println(sameClass.privateVariable);

System.out.println(sameClass.defaultVariable);

System.out.println(sameClass.protectedVariable);

System.out.println(sameClass.publicVariable);

}

}

package com.ts.coe.accessspecifers.samepackage;

public class SamePackageSubClass extends SameClass{

public void display(){

//Write code to access the variables of SameClass from this class.

|  |
| --- |
|  |

}

}

package com.ts.coe.accessspecifers.otherpackage;

import com.ts.coe.accessspecifers.samepackage.SameClass;

public class OtherPackageNonSubclass {

public void display(){

//Write code to access the variables of SameClass from this class.

}

}

package com.ts.coe.accessspecifers.otherpackage;

public class OtherPackageSubClass extends SameClass {

public void display()

//Write code to access the variables of SameClass from this class.

}

}

package com.ts.coe.accessspecifiers.differentpackage;

import com.ts.coe.accessspecifiers.samepackage.\*;

import com.ts.coe.accessspecifiers.otherpackage.\*;

class RunProgram{

public static void main(String arg[]){

SameClass scObj1= new SameClass();

scObj1.display();

SamePackageNonSubClass spnscObj1 = new SamePackageNonSubClass ();

spnscObj1.display();

SamePackageSubClass spscObj1 = new SamePackageSubClass ();

spscObj1.display();

OtherPackageSubClass opscObj1 = new OtherPackageSubClass ();

opscObj1.display();

OtherPackageNonSubClass opnscObj1 = new OtherPackageNonSubClass ();

opnscObj1.display();

}

}

**Assignment 2 – Use of access modifiers**

A class Student is given to you. Add details in the Student class.

Student:

* Instance Variables: studentId : PUBLIC int , studentName : PUBLIC String ,
* Marks: PRIVATE int, grade: PRIVATE int
* PUBLIC Methods: displayDetails(): String ,
* PRIVATE METHOD : calculateGrade(): void
* Default constructor
* A constructor that that takes the following parameter: studentId, studentName, marks.
* Note that grade is not set either through constructor or setter as it is a calculated value.

**Methods**

1. **displayDetails():** This method should display the details of the student in the following format:

**Student [name=John Smith, studentId=123, marks=95, grade=A]**

1. **calculateGrade():**This is a private method that calculates the grade based on the marks that is set. If marks is above 90, grade is set to A. If marks is between 80 and 90, grade is set to B, if marks is between 70-80 grade is set to C, if marks is between 60-70, grade is set to D, if marks is less than 60, grade is set to E.Use this method when you need to set or reset grade.

**Assignment 3 – Write the output for the following**

package com.ts.coe.accessspecifiers.samepackage;

class Test {

protected int num1 = 10;

}

package com.ts.coe.accessspecifiers.diffpackage;

class Sample extends Test{

void display()

{

Test t1 = new Test();

System.out.println(t1.num1);

}

public static void main(String args[]){

{

Sample s1 = new Sample();

s1.display();

}

}