CORE JAVA

MANUAL V8.3

MODULE CODE:

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Module 2: Object Oriented Programming and Package

Chapter 9

Objective: After completing this lesson you will be able to : * Learn how to create packages and sub-packages in Java * Learn how to import packages	**Materials Required:** 1. Computer 2. Internet access
Theory Duration: 90 minutes	**Practical Duration:** 30 minutes
Total Duration: 120 minutes	

Chapter 9

9.1 Creating Package and Sub-packages

A package in Java should be assigned a name and have a package statement. The name of a package must be placed at the top of a program containing interfaces, classes, annotation types and enumerations to be packaged.

Programmers can follow a set of steps for creating packages in Java. Look at the example steps below to get a better idea -

1. The very first step is to create a class. Create a class named c1

```
Class c1() {
}
```

2. Include a method named m1 in the class.

```
Class c1() {
Public void m1() {
System.out.printin ( “m1 of c1” )
}
```

3. Then create a main method

```
class c1(){
public void m1(){
System.out.printin ( “m1 of c1” )
}
public static void main(String args[]){
}
}
```

4. Proceed to create an object of c1 and call the m1 method

```
class c1(){
public void m1(){
System.out.printin ( “m1 of c1” )
}
public static void main(String args[]){
C1 obj = new c1();
obj.m1();
}
}
```

5. The next step is including the class into a package named p1. Add package p1 at the top of the code –

```
package p1;

class c1(){
public void m1(){
System.out.printin ( “m1 of c1” )
}
public static void main(String args[]){
C1 obj = new c1();
obj.m1();
}
}
```

6. Save the program file with name demo.java

7. The next step is compiling the file in the command prompt. After compilation, a class file named c1.class will be created.

8. In the command window, type in javac –d . demo.java. A package gets created after running this command line.

9. Go back to your folder containing the c1.class and demo.java file. You will notice a new folder titled p1. On opening the folder, you will see that the file named c1.class exists within it.

Creating a subpackage

First, perform the steps mentioned above for creating the package named p1. Then follow the steps mentioned below.

1. Add '.p2' to the first line of the code, right after p1. Now the program should look like –

```
package p1.p2;

class c1(){
public void m1(){
System.out.printin ( "m1 of c1" )
}
public static void main(String args[]){
C1 obj = new c1();
obj.m1();
}
}
```

2. In the command window, type in javac –d . demo.java. A subpackage gets created after running this command line.

3. Now go back to the disk location with your p1 package folder. Open the folder and you should see another folder named p2 inside. This signifies that a subpackage named p2 has been created. Click the p2 subpackage and you will find the class c1 file inside.

9.2 Import Package

i) An import statement is used for importing a package in Java. This statement type can also be utilized to import particular interfaces and classes within a package. Keep in mind that an import statement has to be written right after the package statement, and before the class definition.

The import statement in use –

* For importing an entire package –

import package.name.

* For importing a specific class from a package –

import package.name.ClassName.

ii) Another way of importing a package in Java does not involve an import statement. If you want to import the interfaces or classes of certain packages, you can use a fully qualified name.

Practical (30 minutes) – Write the first 5 steps of creating a package in Java with programming example.

Instructions: The progress of students will be assessed with the exercises mentioned below.

MCQ

1. What kind of statement must a Java package have?

a) class statement

b) package statement

c) switch statement

d) None of the mentioned

2. Package has to be placed at the _____ of a program.

a) top

b) bottom

c) left

d) None of the mentioned

3. type in javac ____ . demo.java

a) -c

b) -d

c) -e

d) -b

4. Package appears as a _____ within which you can find the encapsulated class.

a) file

b) folder

c) array

d) None of the mentioned

5. Subpackage is _____ a package.

a) within

b) outside

c) the same as

d) None of the mentioned

6. What statement is used to import a Java package?

a) upload

b) import

c) implement

d) None of the mentioned

7. What statement should be used for importing a certain class within a package?

a) import

b) upload

c) invoke

d) None of the mentioned

8. The package statement has to be written _____ the import statement.

a) before

b) after

c) simultaneously

d) without

9. Can a class be inside a subpackage?

a) Yes

b) No

c) Sometimes

d) Class can be only inside a package, not subpackage.

10. javac –d . demo._____ is the command line for creating a subpackage.

a) class

b) main

c) void

d) java