**Packages**

1. Packages are containers for classes.

- Defines a namespace in which classes are stored.

- Classes are stored in system directories with the name of the package.

2. A package in Java is used to group related classes and interfaces.

3. It is a naming and visibility control mechanism used to avoid naming conflicts.

4. Packages are stored in a hierarchical manner.

- Packages are organized in a structured, tree-like directory format.

- For example, the package `java.util.Scanner` is part of the `util` package:

**java**

**└── util**

**└── Scanner.java**

that is the folder structure will be

- **java/util/**

- Scanner.java files will be inside **java/util/**

**Type of packages**

Two types of packages in java

* 1. **User defined**
  2. **Built-in**

**- User defined - created by programmers.**

**Eg– package cbse or package icse**

cbse

└── Teacher.java

icse

└── Teacher.java

**- InBuilt - prvided by java.**

– java.lang:

primitive types, strings, math functions, threads, and exception

– java.util:

Contains classes such as vectors, hash tables, date etc.

– java.io: Stream classes for I/O

– java.awt: Classes for implementing GUI – windows, buttons, menus etc.

– java.net: Classes for networking

– java.applet: Classes for applet development

**Defining a Package**

1. To create a package, simply include the package command:

*...java code*

*package package\_name;*

*// Example: package Sample;*

*...*

**Accessing a Package**

**1. Use import statement, eg,**

format: import pkg1[.pkg2].(classname|\*);

*...java code*

*import java.util.Scanner;*

*import java.util.\*;*

*...*

**2. Without importing, eg**

*...java code*

*cbse.Teacher t1 = new cbse.Teacher();*

*isce.Teacher t2 = new isce.Teacher();*

*...*

**Uniersity Question**

**Create a package reversepackage. Add a class Reverse in it with a method**

**reverse() to print the reverse of a string without using built-in methods. Create**

**a class outside the package and use this method to reverse a string**

**Ans:**

1. create folder **reversepackage** in working directory and implement class Reverse.java inside reversepackage folder

*// reversepackage/Reverse.java*

*package reversepackage;*

*public class Reverse {*

*public void reverse(String str) {*

*int len = str.length();*

*for(int i=len; i>0; i--) {*

*System.out.print(str.charAt(i-1));*

*}*

*}*

*}//end of Reverse class*

2. return to working directory, and implement class TestPkg.java

// TestPkg.java

import reversepackage.\*;

public class TestPkg {

public static void main(String[] str) {

Reverse rev = new Reverse();

rev.reverse("alice");

}

} // end of TestPkg class

3. excecute as below from workingdirectory

/> javac reversepackage/Reverse.java

/> javac TestPkg.java

/> java TestPkg