**161. What are Packages.**

1. **Package:** A package is collection relevant of class, interfaces or other packages.

2. It is used to organise the java project.

3. We can group related classes and interfaces in a package to organise the code.

4. In java classes and interfaces are stored in the form of files.

5. A package is a folder in simple terms.

6. **Built packages:**

a. src file in lib directory contains all built in packages of java.

7.Methods to import packages:

a. import java.lang.String;

b. import java.lang.\*;

c.

java.lang.String str;

str = new java.lang.String(“Hello”);

**162. Creating a Package.**

1. javac -d . Demo.java: This command is used to create the package. (-d .) decide to where the class file should be put.(If folder not present it is created otherwise the file is created in that folder.)

2. javac tool have functionality to create package as per name mention in java file.

3. You can add more file to package using above command.

**163. Access Modifiers.**

1. Four types of modifiers:

a. Default.

b. Private.

c. Public.

d. Protected.

2. We can use access modifiers on variable, class and methods.

3. The outer class cannot be private or protected, it can only be public or default.

4. If an object of class A is used in class B then they have relationship of **hasA.**

5. If a class A is inheriting from class B then they have relationship of **isA.**

6.

//pack1

class P1

{}

class P2 extends P1 //sub class in same package

{}

//pack2

class Q1 // non-sub class.

{

P1 p = new P1();

}

class Q2 extends P1 // sub class in another package.

{}

7.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Default** | **Private** | **Protected** | **Public** |
| Same Class | Y | Y | Y | Y |
| Same Package Sub Class | Y | N | Y | Y |
| Same Pack Non – Sub Class | Y | N | Y | Y |
| Different Pack Sub Class | N | N | Y | Y |
| Diff Pack Non Sub class | N | N | N | Y |

**Public:** Everywhere.

**Default:** Same package.

**Private:** Only in same class.

**Protected:** Same package and sub class.

**164.Practice: Access Modifiers.**

**165. Creating a Package.**

1. Q1. Project:

a. University:

Student

Course

Book

Library

LibraryAccount

b. Bank.

2. The package should be based on the domain or url of university.

For: <https://www.uni.com>

com.univ.academics

com.univ.admission.account

3. To avoid name conflicts the package or class should kept in the domain name packages.

4. For : https//www.citi.com

com.citi.loans

com.citi.account