Packages in Java

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1. A package is nothing but a physical folder structure (directory) that contains a group of related classes, interfaces, and sub-packages according to their functionality.

2. It provides a convenient way to organize your work. The Java language has various in-built packages.

For example:

java.lang,

java.util,

java.io

java.net.

3. All these packages are defined as a very clear and systematic packaging mechanism for categorizing and managing.

Advantage of using Packages in Java

1. **Maintenance:** Java packages are used for proper maintenance.
2. **Reusability:** We can place the common code in a common folder so that everybody can check that folder and use it whenever needed.
3. **Naming conflict:** Packages help to resolve the naming conflict between the two classes with the same name.
4. **Organized:** It also helps in organizing the files within our project.
5. **Access Protection:** A package provides access protection. It can be used to provide visibility control.

Types of Packages

There are mainly two types of packages available in Java.

1. **User-defined package (also called custom package)**
2. **built-in package (also called predefined package)**

User-defined Package

The package which is defined by the user is called user-defined or custom package in Java. It contains user-defined classes and interfaces.

"**package**" keyword is used to create user-defined packages in Java.

```
package packageName;
```

Example:

```
package myPackage;
    public class A {
        // class body
        }
```

Naming Convention for User-defined Package

Suppose you are a student of PG-DAC Course in CDAC and the website name of CDAC is **www.cdac.in.**

You can declare the package by reversing the domain like this:

```
package in.cdac.course.pgdac;
```

Note: Keep in mind Root folder should be always the same for all the classes.

Predefined Packages in Java (Built-in Packages)

Predefined packages in Java are those which are developed by Sun Microsystem or some other companies. They are also called built-in packages.

1. **Core Packages:** Core Packages are predefined packages given by Sun MicroSystems which begin with “java”.
2. **Extended Packages:** Extended packages are also predefined packages given by Sun Microsystems which begin with “**javax**”.
3. **Third-Party Packages:** Third-Party Packages are also predefined packages that are given by some other companies as a part of Java Software.

Example: oracle.jdbc, com.mysql, etc.

Key points remember

1. While importing another package, package declaration must be the first statement and followed by package import.
2. A class can have only one package statement but it can be more than one import package statement.
3. import can be written multiple times after the package statement and before the class statement.
4. You must declare the package with root folder name (No subfolder name) and the last file name must be class name with a semicolon.
5. When you import, it does mean that memory is allocated. It just gives the path to reach the file.
6. import **in.cdac.delhi.course.pgdac**; is always better than import **in.cdac.delhi.course.pgdac**.*;.