**1. What is a Package in Java?**

* A package is a way to group related classes, interfaces, and sub-packages.
* It helps in organizing code, avoids name conflicts, and improves reusability.
* There are two types of packages:
  + **Built-in Packages:** Provided by Java (e.g., java.util, java.io).
  + **User-defined Packages:** Created by developers.

**2. Working with Built-in Packages in Eclipse IDE**

**Steps to Demonstrate Built-in Packages:**

1. **Create a New Java Project:**
   * Open Eclipse IDE.
   * Go to File > New > Java Project.
   * Enter the project name, e.g., BuiltInPackageDemo.
2. **Create a Java Class:**
   * Right-click on src > New > Class.
   * Name it BuiltInExample and check public static void main(String[] args).
3. **Write Code to Use a Built-in Package:**

import java.util.Scanner; // Importing a class from java.util package

public class BuiltInExample {

public static void main(String[] args) {

// Using Scanner to read input

Scanner scanner = new Scanner(System.in);

System.out.print("Enter your name: ");

String name = scanner.nextLine();

System.out.println("Hello, " + name + "!");

scanner.close();

}

}

1. **Run the Program:**
   * Right-click the file > Run As > Java Application.
   * Enter input in the Console window to see the output.

**Key Built-in Packages to Explain:**

* **java.util:** Contains classes like Scanner, ArrayList, HashMap.
* **java.io:** For file handling.
* **java.lang:** Core Java classes (no need to import explicitly).
* **java.net:** For networking.

**3. Working with User-defined Packages in Eclipse IDE**

**Steps to Demonstrate User-defined Packages:**

1. **Create a New Java Project:**
   * Go to File > New > Java Project.
   * Enter the project name, e.g., UserDefinedPackageDemo.
2. **Create a Package:**
   * Right-click on src > New > Package.
   * Enter the package name, e.g., mypackage.
3. **Create a Java Class Inside the Package:**
   * Right-click on mypackage > New > Class.
   * Name it MyClass.
4. **Write Code in MyClass:**

package mypackage; // Declaring the package

public class MyClass {

public void displayMessage() {

System.out.println("Hello from the user-defined package!");

}

}

1. **Create Another Class to Use the Package:**
   * Right-click on src > New > Class.
   * Name it MainClass.
2. **Write Code in MainClass:**

import mypackage.MyClass; // Importing the user-defined package

public class MainClass {

public static void main(String[] args) {

MyClass obj = new MyClass(); // Creating an object of MyClass

obj.displayMessage(); // Calling the method

}

}

1. **Run the Program:**
   * Right-click on MainClass.java > Run As > Java Application.
   * Check the output in the Console.