**Packages-**

* Package is nothing but collection of classes and interface that’s works together called as packages.
* A package in Java is used to group related classes.
* Types of packages in java:
  + Built-in Packages
  + User-defined Packages

Java.lang is default package in java.

We can create our custom packages also.

**Why?**

Suppose imagine, if you have large number of files in your project that is deployed on server, now the code is released on production server. There are bugs in specific files then how you can reach to that file without packages is very difficult. If you have packages then it will get very easy to go specific folder and found that file. That’s why packages comes into picture.

**Advantages**

* Reusability- we can place the common code into one folder and reuse it.
* Maintenance- if any new developer/tester joined your company then it will be easy to find the file which they wanted.
* Readability- by using packages readability of code is improved

**Syntax-**

com.wipro.jpmorgan.insurance.policy.education

Here,

* Package are generally starts with com folder.
* wipro is your company name.
* jpmorgan is your client name.
* insurance is your project name.
* policy is your module name.
* education is your sub-module name.

Note- All alphabets are starts with small case letters only.

**User-defined Packages**

* To create your own package, you need to understand that Java uses a file system directory to store them. Just like folders on your computer:
* For above example it will be like

└── com

└── wipro

└── jpmorgan

└── insurance

└── policy

└── education

**import-**

* When we use one class within another class then go for import statement.
* Example- suppose we have two different classes Test & Example in different packages.

**package** com.velocity;

**public** **class** Test {

//method or variable

**public** **void** m1() {

System.***out***.println("this is the m1 method");

}

}

**package** com.wipro.jpmorgan;

**public** **class** Example {

**public** **static** **void** main(String[] args) {

Test test= **new** Test();

}

}

* In the test class, we are calling the method of test class, so we need to use the import statement here. Otherwise it will give compile time error
* To resolve this issue, we need to import the highlighted line that is Import **import** ’Test’(com.velocity) by just clicking on it.

Different ways for import-

**import** com.velocity.Test; //correct

**import** com.velocity.\*; //correct- it will import the all the classes.

**import** com.velocity; //wrong

**Scanner in java**

* The Scanner class is used to get user input data.
* Scanner is a class in java.util package used for obtaining the input of the primitive types like int, double, etc. and strings.
* It is the easiest way to read input in a Java program.
* To create an object of Scanner class, we usually pass the predefined object System.in.
* To read numerical values of a certain data type, the method to use is nextXYZ(). For example, to read a value of type short, we can use nextShort() and so on.
* To read strings, we use nextLine().
* To read boolean, we use nextBoolean().
* To read byte, we use nextByte().
* To read double, we use nextDouble().
* To read float, we use nextFloat().
* To read int, we use nextInt().
* To read long, we use nextLong().

Program for using scanner.

**Example-1**

**import** java.util.Scanner;

**public** **class** Demo {

**public** **static** **void** multiplication(**int** no) {

**for** (**int** i = 1; i <= 10; i++) {

**int** c = no \* i;

System.***out***.println(no + "\*" + i + "=" + c);

}

}

**public** **static** **void** main(String[] args) {

System.***out***.println("Enter the number for multiplication>>");

Scanner scanner = **new** Scanner(System.***in***);

**int** x = scanner.nextInt();

System.***out***.println("value>>" + x);

*multiplication*(x);

}

}

**Example-2**

**import** java.util.Scanner;

**public** **class** Test{

**public** **int** add(**int** a, **int** b) {

**int** c = a + b;

**return** c;

}

**public** **static** **void** main(String[] args) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.println("Enter the first number>>");

**int** firstNumber = scanner.nextInt();

//take the input from user use nextInt();

System.***out***.println("Enter the second number>>");

**int** secondNumber = scanner.nextInt();

System.***out***.println("first Number>>"+firstNumber);

System.***out***.println("second Number>>"+secondNumber);

Demo demo = **new** Demo();

**int** add=demo.add(firstNumber, secondNumber);

System.***out***.println("Addition>>"+add);

}

}

**Example-3**

**import** java.util.Scanner;

**public** **class** Example {

**public** **static** **void** main(String args[]) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.println("Enter the number>>");

**int** no = scanner.nextInt();

System.***out***.println("Enter the name>>");

String name = scanner.next();

*getStudentInformation*(no, name);

}

**static** **void** getStudentInformation(**int** no, String name) {

System.***out***.println("Student no is>>" + no);

System.***out***.println("Student name is>>" + name);

}

}

**Example-4**

**import** java.util.Scanner;

**public** **class** Example {

**public** **static** **void** main(String args[]) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.println("Enter the name>>");

String name = scanner.next();

*getStudentInformation*(name);

}

**static** **void** getStudentInformation(String name) {

System.***out***.println("Student name is>>" + name);

}

}

**Note:** If you enter wrong input (e.g. text in a numerical input), you will get an error message.