Experiment 8

Aim:- To write a Java program which imports user defined package and uses members of the classes contained in the package.

Software Used- Eclipse

Theory:

Package

•A package is a group of similar types of classes, interfaces and sub-packages. Package act as a containers for classes and other subordinating packages. Package can be categorized in two form.

1) built-in package .
2) user-defined package

•Example of built-in packages such as java, lang, awt, javax, swing, net, io, util, sql etc.
For Example- import java.io.*;
•We are importing classes of java.io package. Here, java is directory name and io is another sub directory within it. The '*' represents all the classes and interfaces of that io sub directory.
• Packages allow you to organize your classes into smaller unique i.e. Folder & make it easy to locate & use the appropriate class file. It helps you to avoid naming conflicts.
• It allow to protect your classes & data in a larger way.

Advantage of Package

• Packages allow you to organize your classes into smaller unique i.e. Folder & make it easy to locate & use the appropriate class file.
• It helps you to avoid naming conflicts.
• It allow to protect your classes & data in a larger way then on class to class basis.

General form for creating a package:

package packagename;
e.g.: package pack;
The first statement in the program must be package statement while creating a package.
While creating a package except instance variables, declare all the members and the class itself as public then only the public members are available outside the package to other programs**.**

How to run the Package

•To Compile: javac -d . Simple.java
•To Run: java mypack.Simple
•The –d option tells the Java compiler to create a separate directory and place the .class file in that directory (package).
•The (.) dot after –d indicates that the package should be created in the current directory. So, out package pack with Addition class is ready**.**
Subpackage Package inside the package is called the subpack

•package packagename . subpackagename;
•e.g.: package pack1.pack2;
•Here we are creating pack2 subpackage which is created inside pack1package.
•To use the classes and interfaces of pack2, we can write import statement as:

import pack1.pack2;

How to send the class file to another directory or drive?

•If the package pack is available in different directory, in that case the compiler should be given information regarding the package location by mentioning the directory name of the package in the classpath.
•The CLASSPATH is an environment variable that tells the Java compiler where to look for class files to import. If our package exists in e:\sub then we need to set class path as

Compile and run

•To Compile:e:\sources> javac -d c:\classes Simple.java To Run:
•To run this program from e:\source directory, you need to set
classpath of the directory where the class file resides.
•e:\sources> set classpath=c:\classes;.;
•e:\sources> java mypack.Simple

Program Code:

```
package vehicles;
public class Car implements Vehicle
{
	public void run()
	{
		System.out.println("Car is running.");
	}
	public void speed()
	{
		System.out.println("Speed of Car: 50 Km/h");
	}
	public static void main(String args[])
	{
		Car Car = new Car();
		Car.run();
		Car.speed();
		System.out.println("Hello World!");
	}
}
```

Output:

C<u>onclusion:</u>

Questions-

Q.1 What is package?

Q. 2 What are advantages of packages?

Q. 3 What are java API?