

**IT1712**

Object-Oriented Programming Concepts

# Object-Oriented Programming

It is a programming methodology that defines objects whose behaviors and interactions accomplish a given task.

# Object

* An object has characteristics or **attributes**.
* The values of an object’s attributes give the object a **state**.
* The actions that an object can take are called **behaviors**. Each behavior is defined by a piece of Java code called a **method**.

# Class

* Objects of the same kind are said to have the same data type and belong to the same class.
* A **class** defines a kind of object; it is a blueprint for defining the objects.
* The data type of an object is the name of its class.

# Inheritance

* One way of organizing classes is through inheritance.
* Inheritance allows objects of a class to take on the properties of objects from another class.
* Inheritance is used to avoid the repetition of programming instructions for each class.
* To apply inheritance between classes, the ***extends*** keyword is used.

# Interface

* An **interface** is a program component that contains the heading for a number of public methods.
* Some interfaces describe all the public methods in a class while others specify only certain methods.
* An interface is used by another class through the ***implements*** keyword.

# Package

* A **package** is a collection of related classes and interfaces that have been grouped together into a folder.
* The name of the folder is the name of the package.
* The classes in the package are each placed in a separated file and the file name begins with the name of the class.
* You can use all the classes that are in a package within any program or class definition by placing an

**import** statement.

* The class does not need to be in the same folder with the classes in the package. The syntax is:

import package\_name.class\_name\_or\_asterisk;

Examples are:

import java.util.Scanner; import java.util.\*;

**01 Handout 1 *\*Property of STI***

**Page 1 of 1**