

# **Programming in Java**

## **Assignment Set 6**

**Date: 26/02/2019**

1. Write a java file Person.java containing definition of independent class Person in package com.person and another java file Address.java containing definition of independent class Address in com.address package.
2. Write a container class employee that has a person and an address object as contained data members (besides other data members) by importing the above packages. Demonstrate the passing of arguments in the constructors of person and address classes by the constructor of the employee class.
3. Define a base class person and a derived class employee with single inheritance - Define SetData() member functions in each of the class with different signatures to set the data members and demonstrate overloading of member functions. Define GetData() member functions in each of the class with same signatures to display data and demonstrate overriding of member functions. Rework this program to use both inheritance and containership. The employee class inherits from person class and acts as a container class for address class object.
4. Create a package called Mathematics under your development directory called "MyApplication". Now create two packages "geometry" and "algebra" under Mathematics. The geometry package contains classes like "Triangle" and "Rectangle". Write proper data members, constructors and methods to compute any sort of manipulation relevant to the above classes [e.g area(), perimeter(), etc.] . The algebra package contains a class called "TwoDEquation". Write the class such that it must include a method that returns the largest +ve root for a given equation. Demonstrate the above program by importing both the packages assuming that your application is in "MyApplication" directory.
5. Write a program that creates a base class called "Number". This class holds an integer value and contains a virtual function called displayNum( ). Create two derived classes called "HexNum" and "OctalNum" that inherit "Number". Override displayNum( ) in the derived classes so that it displays the value in Hexadecimal and Octal, respectively. Write a main( ) function to create objects of type "HexNum" and "OctalNum" classes and display the hexadecimal and octal form of the supplied integer value. Note: Use base class object to call a function.