GLS UNIVERSITY
Bachelor of Computer Applications (BCA)
(Core Course)
Semester-III
210301305 PRACTICALS ON CORE JAVA
Assignment 3
Unit-3 Inheritance, Interface and Packages

1. Write a Java program to create a class called Shape with a method called getArea. Create a subclass called Rectangle that overrides the getArea() method to calculate the area of a rectangle. (Value should be taken from User)
2. Write a Java program to create a class known as Person with methods called getFirstName() and getLastName(). Create a subclass called Employee that adds a new method named getEmployeeId() and overrides the getLastName() method to include the employee's job title. (Value Should be taken from User).
3. Write a program in Java in which a subclass constructor invokes the constructor of the super class and instantiate the values.
4. Write a program in Java to develop overloaded constructor. Also develop the copy constructor to create a new object with the state of the existing object.
5. Write a Java Program to create a simple class to find out the Area and perimeter of circle and box using super and this keyword.
6. Write an application that illustrates how to access a private variable. Class A declares a static variable x. The class B extends A and declares an instance. • variable x. display() method in B displays both of these variables.
7. Write a program in Java to demonstrate use of final class ,final method, and final variable.
8. Write a Java program that demnostrate the implementation of Multilevel and Multiple Inheritance.
9. Describe abstract class called Shape which has three subclasses say Triangle, Rectangle, Circle. Define one method area() in the abstract class and override this area() in these three subclasses to calculate for specific object i.e. area() of Triangle subclass should calculate area of triangle etc. Same for Rectangle and Circle.
10. Write a Java program to create an interface area having pie as its data members and a method compute(float, float) Create a class rectangle and circle which implements area interface.
11. Write a Java program to create an interface Sports having sportmarks as data member and a method putweight(). Create a class result which implements sports interface having data member total

(stores total of 3 subject marks) and percentage (total + sportmarks). Calculate the percentage and grade and display the same.
12. Write a java program which shows importing of classes from other packages.
13. Write a java program to create a package that access the member of external class as well as the same class.
14. Create a package named MyPackage which consists a class named Student which stores information like the roll number, first name, middle name, last name, address and age of the student. The class should also contain appropriate get and set methods.
15. Consider two types of residency, a Flat or a Villa. All types of residences have an area (square yards) and a rate (per square yard). The property price of a residency is by default calculated as area * rate. In case of Flat, the price get incremented by the maintenance charges, and in case of Villa the price is incremented byfurniture charges. Now define the following classes in a common package called “residence”. An abstract class called Residency, with appropriate methods and constructors. • Two sub-classes called Flat and Villa, which inherit from the Residence class and override the appropriate methods, from Residency class.
16. Write a program to create a class to demonstrate the use of the methods of String class.
17. Write a Java application to count and display frequency of letters and digits from the String given by user.
18. Write a Java Program which will read a string and rewrite it in the alphabetical order e.g. The word STRING” should be written a GINRST.
19. Write a Java Program to demnostrate converting primitive data types into wrapper objects. (Auot Boxing)
20. Write a Java Program to demnostrate converting wrapper object into primitive types. (Auto Unboxing)
21. Write a Java Program to demonstrate all methods of string buffer class.