# *CSE18R272-LAB MANUAL*

*KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION*

*COMPUTER SCIENCE AND EDUCATION*

***Date***: *15-09-2020*

***Day***: *Tuesday*

***Name :*** *BUDATI RAMU*

***Reg.no*** *:*9919004044

***Subject :*** *Java programming language*

***Code :*** *CSE18R272*

***Section :*** *A5*

***Date of submission*** *:15/09/2020*

***1.write  a java program to implement inheritance using super keyword.***

Program:

```
class Box
{
	private double width;
	private double height;
	private double length;
	int i;

	public Box(double w,double h,double l)
	{
		width=w;
		height=h;
		length=l;
	}
	public Box()
	{
		width=-1;
		height=-1;
		length=-1;
	}
	double volume()
	{
		return width*height*length;
	}
}
class Boxweight extends Box
```

```
{
	double weight;
	Boxweight(double w,double h,double l,double we)
	{
		super(w,h,l);
		weight=we;
		i=15;
	}
	Boxweight()
	{
		super();
	}
	void sum()
	{
		System.out.println("i: "+super.i+i);
	}
}
public class Main {
	public static void main(String[] args) {
		Boxweight b1=new Boxweight(2.3,4.5,2.6,7.8);
		Boxweight b2=new Boxweight();
		double d=b1.volume();
		System.out.println("vol of b1 :"+d);
		d=b2.volume();
		System.out.println("vol of b2 : "+d);
		b1.sum();
	}
}
```

Output::

vol of b1 :26.91

vol of b2 : -1.0

i: 1515

***2 . Create a class called Date that includes three pieces of information as instance variables—a month (typeint), a day (typeint) and a year (typeint). Your class should have a constructor that initializes the three instance variables and assumes that the values provided are correct. Provide a set and a get method for each instance variable. Provide a method displayDate that displays the month, day and year separated by forward slashes(/). Write a test application named DateTest that demonstrates cl.***

***Program :***

```
Class Date
{
        Int month;
        Int day;
        Int year;

        Public Date(int m,int d,int y)
        {
                If(m<13&&d<32)
                {
                        Month=m;
                        Day =d;
                        Year=y;
```

```
        }
        Else
        {
                System.out.println("incorrect data");
        }
}
Void setMonth(int m)
{
        If(m<13)
          Month=m;
        Else
           System.out.println("incorrect month");
}
Void setDay(int d)
{
        If(d<13)
          Day=d;
        Else
           System.out.println("incorrect day");
}
Void setYear(int y)
{
        Int chk=y/10000;
        If(chk==0)
          Year=y;
        Else
           System.out.println("incorrect year");
}
```

```
	Int getMonth()
	{
		Return month;
	}

	Int getDay()
	{
		Return day;
	}

	Int getYear()
	{
		Return year;
	}

	Void displayDate()
	{
		System.out.println( “The Date :”+month+”/”+day+”/”+year);
	}
}
Public class Main {
	Public static void main(String[] args) {
		Date d=new Date(9,15,2020);
		d.displayDate();
		d.setMonth(10);
		d.setDay(12);
		d.setYear(2021);

		d.displayDate();
```

```
        }
}
```

***Output***:

The Date :9/15/2020

The Date :10/12/2021

***3 . Provide a static Method modifyInterestRate that sets the annualInterestRate to a new value. Write a program to test class SavingsAccount. Instantiate two savingsAccount Objects, saver1 and saver2, with balances of $2000.00 and $3000.00, respectively. Set annualInterestRate to 4%, then calculate the monthly interest and print the New balances for both savers. Then set the annualInterestRate to 5%, calculate the Next month's interest and print the new balances for both saver***

Program:

```
Class SavingsAccount{
   Static float AnnualIntrestrate = (float)4.0;
   Private float SavingsBalance;
   Void caluclateMonthlyIntrest(){
      Float intrest = ((SavingsBalance*AnnualIntrestrate)/12);
      SavingsBalance+=intrest;
      System.out.println("balance is " + SavingsBalance);
   }
   Static void  ModifyIntrestrate(float rate){
      AnnualIntrestrate=rate;
   }
   Public SavingsAccount(float balance){
```

```
        SavingsBalance=balance;

    }

}
Public class Main
{
        Public static void main(String[] args) {
                SavingsAccount s1 = new SavingsAccount(2000.0f);
                SavingsAccount s2 = new SavingsAccount(3000.0f);
                S1.caluclateMonthlyIntrest();
                S2.caluclateMonthlyIntrest();
                SavingsAccount.ModifyIntrestrate(5.0f);
                S1.caluclateMonthlyIntrest();
                S2.caluclateMonthlyIntrest();
        }
}
```

Output:

Balance is 2666.6667

Balance is 4000.0

Balance is 3777.7778

Balance is 5666.6665

***4 . Create a class called Book to represent a book. A Book should include four pieces Of information as instance variables-a book name, an ISBN number, an author Name and a publisher. Your class should have a constructor that initializes the Four instance variables. Provide a mutator method and accessor method (query***

***Method) for each instance variable. Inaddition, provide a method named getBookInfo that returns the description of the book as a String (the description should include all the info***

***provide a method named***

***getBookInfo that returns the description of the book as a String (the description should include all the information about the book). You should use this keyword in member methods and constructor. Write a test application named BookTest to create an array of object for 30 elements for class Book to demonstrate the class Book's capabilities.***

***Program:***

```
Import java.util.Scanner;
Class Book
{
   String bookName;
   String author;
   String ISBN, publisher;
   Book(String title, String auth, String isbn, String publish)
   {
      bookName = title;
      author =auth;
      this.ISBN = isbn;
      publisher = publish;
   }
   Void setTitle(String name)
   {  bookName = name; }
   Void setAuthor(String auth)
   { author = auth; }
```

```
   Void setISBN(String s)
   { ISBN = s; }
   Void setPublisher(String p)
   {
      Publisher = p;
   }
   String getTitle()
   {  return bookName; }
   String getAuthor()
   { return author; }
   String getISBN()
    { return ISBN; }
    String getPublisher()
    { return publisher; }
   String bookInfo()
   {
      String info = bookName + " " + author + " " + ISBN + " " + publisher;
      Return info;

   }
}

Public class Main
{
        Public static void main(String[] args) {
           Book b[] = new Book[30];
           B[0] = new Book("Programming in Java", "Rama", "12345", "Wiley");
           String title, auth, isbn, publisher;
           Scanner s = new Scanner(System.in);
```

```
            For (int I =1; I < 5; i++)
            {
                Title = s.next();
                Auth = s.next();
                Isbn = s.next();
                Publisher = s.next();
                B[i] = new Book(title,auth,isbn,publisher);
            }
            B[2].setTitle("Software Testing");
            System.out.println(b[2].getTitle());
            String info;
            For (int I =0; i<5; i++) {
               Info = b[i].bookInfo();
               System.out.println(info);
            }

        }
}
```

Input && Output ::

```
Programming
Ramu
1111
Siva
Wings
Koti
2222
Siva
```

Fun

Nithin

3333

Siva

Php

Naga

4444

Siva

Software Testing

Programming in Java Rama 12345 Wiley

Programming Ramu 1111 siva

Software Testing Koti 2222 siva

Fun Nithin 3333 Siva

Php naga 4444 siva