B.M.S. College of Engineering

(Autonomous College Affiliated to Visvesvaraya Technological University, Belgaum)
Bull Temple Road, Basavanagudi, Bengaluru – 560019



Department of Computer Science & Engineering (CSE)

Report Programs Observation

Course Title: Object Oriented Java Programming

Course Code: 23CS3PCOOJ

BY Bhavya Hanwitha(1BM22CS095)

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Department of Computer Science & Engineering (CSE)

CERTIFICATE

This is to certify that the report on "Java Lab Programs" has been carried out by Bhavya Hanwitha bearing USN 1BM22CS095 as a part of AAT for the course Object Oriented Java Programming with course code 23CS3PCOOJ, Computer Science and Engineering from Visvesvaraya Technological University, Belgaum during the year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessments have been incorporated in the report.

Bhavya Hanwitha

Shravya AR

1BM22CS095

Department of CSE

BMSCE, Bengaluru-19

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2. 1 1000 se some stree import java . util . scanner: 311 clay student for all the string usn; 99t String name; 13 19 10 int marke [] = new int [6]; 10000 3000 131100 void Details () 201192 Scanner 5= new scanner (system.in) System. out. printen ("Enter USD")-) usn = s. next(): System - DUE · printlu ("enter name")" name = s. neut (); system. out , print la l'uenter maria for 6 students: "); for (int i = 0; i < 6; ift) system. out. print (" suspect " + (i+1)+" marte[1] = s-nent Int ()+ double persentage 1) int total 20. for line =0; 166', it -)

3. Quadratic equation import java util scanner import java dang math: dan quadractic & public static vold main (Storing args[]) int a,b, c; System. out. printen | "inter values of a,b,c resp"); scanner sec : new scanner (Systemin) a= sc. next Int() d= = 10 B = SC . next int (-) - c = schentint()j.m. Equation eq = New equation (a,b,c); eq. quad (); (0==0) 4.000 406 2 Just 1 1 4 408 class equation wint and poor to 1. I do Equation (int " int y, int 3 quad () if (a=0) SOP ("Not quadratic");

SDP In 1" Two real and outpurent notution")" double 81= - b+ math) Sax+ ((d)/12+a); double To = - b - Mathy SOPL- (81); sop a (72); ese if (d==0)? \$ "(" dray a dea 19 Sopen (" real & same goot "); TI= (- b + Math sqrt (d))/(27a); 12 = (-b - Math . sgrot (d)) (2 a) system · out · println (681) = 50Per (82); enerif (d = = 0) soper | "Red Esam eue it la some (" Imaginary sou"); double real = - 6/200)

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Plate Annielle Market up 16 Miles eq Output: enter the values of a, b, c imaginary solutions. The source than describe Jugania spirate alegaria Property and departy they will the Recommendation wine withing 16 some of exception (" contract of contract) the Winds stands stands public Things (the boat int height Super Land 1990 S SOFLET ME ON COLD

1. Develop a java program to crease abstact class shap twee dance rectangle Shape I , cirule , shape I protected int simensionly protected int dimensions; public shape (int d 1 / int d 2) [this de = d!;

this de = d2; public abstract void priotAre a (); clan Rectangle extends Shape {

public Rectangle (int length intwiden)

{ supercength, int width 15 public void print Area () {

int area = 11 t d2;

System. out. printly ("Arear = + wrea))

} public Thange (int bare, int height) Super(bare, heine); public void print preas) { 50Pln("Area", area);

ilan circle ensends shape? public Triangle (in+ radius) & super (racing, 01; public void print Area () f double area = Math. P1 + d1 + d1; 'soph ("Area" + area) in 3) + 1930 - Proposition on and applicate public class prair & propertionius public static void main (String[] or ing Arount distry salariel). Rectange, rectangle : new Rectanguelle, 5 rectangle print Area () The Sale of the Indoor Actions where Triangle triangle = new triangle (3,6)? triangle print Area(); circle ville = new Circle (7); arche print Area () Area of tolangle = 9.0 Asea OC ardl = 153.9326

clay Bank & public static main (string [] arge / 9 savings Account savings Account = new saving August "Tohn Doe", "SALODI" Current Account & current Account = new current Account ("Janey smith", "(A2002") ecubic creek that the diff saving Account deposit (500); savings Auront · display Balance (); savinge Account . computer Interest (? savings Account display Balance() steerings Account withdraw (200) saving Account display Balance (). Rectorge rectable and someon of the st current Account descrit (8006). current Account display Balance (); 1 10 more introp assurated class A count } projected string autometrame battled gample public Account (string vistomenta string account Number 1.3 tenis balgo 4 = 5 3.831 5 X13

public void deposite (double amount) & balance + = amount vi 8012 ("Deposit of "ramouns +" muentul "1) system out println!" Acc NO!! + account

Number + "In-Balance": & "I + balance); public savings Account (String automer pame } {
super (Customeriname, account Name); of public void with draw (double amount) if (balance) = amount) 5 balance -= amount' System out printer 1" withoraral sorch (" INWER d'erent punde");

clan current Account mendy Accounts privale double min Balance = 1000 poblic current Acal String custome None, etring account Number of super (customer dane, accessing Numi public void withdraw | double any 15 if (balance amount) = minimum balance -= amount; System. out printsh pri withdrawals i amount + " runoufue "); energen mother 1 12go sore ("Insufficient jundi") impose Service Change (); private raid imporfarrice charges double service charge = 20 balance -= service charge sopel ("cervice charge"+ revolve change "+ imposed "!

OP Deposit of 5000 successful ALL no: SALDOL Balance : 5000.0 Interest of 250.0 computed se added Ace no: SA1001 Balance : 5250 6 withdraway of \$2000.0 succentul 10 10' SA1001 Balance: 3250,0 Depont of 18000.0 meressful Ace no: (A 2 602 Balanie: 8000 Otal withdraway of 500000 meesful Ace no! (A 200 23 Ralance's 2000.0 ASSIGNED IN 0 69 330A. 800 Credie distribute emps." Toma greet create coale depth deptho into comme varihar (30), allot & varihar (30), primary ka il valed their call man tops off their ' (' pred ' 'yg' of) (so there to the age ! · (i, i tops out (Frail (molog) 03)

Page Bhoring 6. Packagel crease a package CIF with aclaus - student indernall with USN Swolent package cie; public day student & public string name; public storing usn' 3 public int ven; Internal package cie; public clay Enternals entends Modern & public int [] marks = new int [5]) enternal java -> parkage see; import cie. student; public dan Emernal emends student ! public int[] seemarks = new int [5]

Emport cie internaly import See External; import java util scanner; Public main & f (spra [Storing [] args) } sopen ("enter no of student") scanner input = new : scanner (sys . in) int n = input · nent tot ()) Internals[] SI = new Internals[n]; Externals [7 5) = new Externals[n]; int [3 finalcie = new int [n]; int[] final see = new int[n] AOV (int 1=0; 12n; 1'++) ali] = new External () ; Tomas SOP in ("Enter name") Sa[i] name = input next () & sop du ("UIN") of iz. VSN = input. neut(); SITI) - sem = input. new Int. (); sop du ["enter the marks of 5 sub!"); for (int j=0; j 5; j++) * szrij . seemarks Ej J= input 'neutInt binalneali) == 52 (i) see marla si)

SOP en!" Final marks!"); cor (int i=0; i<5; i++) S Cranner Will Same sop en ("vame: " + SI[i] rame + 11 USN 11 + SICI) 180504 "Sem: " + SI[i] sem); SOP en l' Internals marts : " + fince act SOP In ("External marks:" + Final seeli) it is in in it is now that (1) ! Paymater 1 st : new testing of a Extends [] 50 - new Extended [0 "enter" no. of students ICA Isal was rea laid ITeller name Tacle (++4 inst + ++ NIN Still and External 1 - 10081 enter the remains who ") as 3 (1 5 xan - Book = amon . 1 marker of 5 soli (" 1886 ") and and 10 14 an Honi + Liv. a. 20 ("mas +s+n,") 1 402 Total went . sugar a may . (This 10, 3 10 12 10m / VILLE name: pack your: 01 - sen : 3 nunal 100 ever nal: 70 notai : 70

Program:7 write a program that demonstrates handling of exception in inheritance tree. ereate a basis class called "Father" & derived class equed "son" which extends the base dan. In Fartler dan, implement a constructor which takes the age throws the exception wrong Age () when the input age < 0. In son class, implement a constructor that cases both father and son's age and throws an exception it son's age is > = fathu's age clau wrong Age extends Exception { public wrongage (String message) & super (menage) class Father & public Father lint age) throws wrong Age ? 1 = (age < 0) { throw new Wrong Age 1"Age eant be negetive; this age = age; public int ger Age () & return age;

elan Son Extendy Father & int sonAge; public son (int father Age , int sonage) throws wrong Age & super (father Age); if (son Age > = father Age) { throw new wrong Age ("sons age cannot be greater than or equal "); this. son Age - son Age; public int getsonAge () { rewrn sonAge; public dan hans public static rold main (String[] any try l (and and some Father father = new Father (35)? System. out printles ("Father's age" + father gettig Son son = new Son (35,10) System , out print en g" son's age: "+ eatch (wrong Age e) }

System. out. printle ("Exc caught" t son-getsone c. get Meg ()

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Program: 8. Threade DispMessage extends Threads & String menage; int interval; public Disp Menage (String menage, int interval this. menage = menage; this ainterval = interval; public void run()? while (true) { System out point la (menage) Thread . sleep (interval); e. printstackTrace (); public dan Hi? public Static void main (String[] argl Disp menage by Thread = new Disp Menage ("BM3 collège OF Engineering", 10000); bmg Thread . Start ();

cge Thread . start ();

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program import java aut "; import java. aut event "; public dan ANTExample extends windowardaptiq frame fi AWTExample () { f = new frame (); F. and window (this); Lable 1 = new Label ("Emp id:"). Button b = new Botton l'isubmi.". Textfield += new Textfield () 1. setBounds (20, 80, 80, 30); + · Set Roundy (&5, 100, 80,30); b. set Bounds (100, 100, 80, 30); f. add (b); F.ada (1); f. add (+) f. setsize (400,300); f. set Title ("Employee into"); F. Set Layout (null); f. setvisible (true); public void window closing powindow Event System. exit(0)

public static void main (String [] args) ANTEXAMPLE aNT = new ANT Example (); create a button & add a action listener 2. I now printed a later states states import java aut + j import java.awt.event." public class Event Handling extends Window Adapter implements Action Listener? Frame + .

Text Field +F; Event Handling C19 F = new Frame (1), f. addwirdowListener (this); t F. set Bound (60,50, 170, 20); Button b = new Button ("clink me"); b. set Bounds (100, 120, 90, 30); b. add Action Listener (this); f. add (b) ; f. ada(tF); F . setSize (300,300); f. setLayout (nul): F. setvisible (true);

public void action performed (Action Event to set Text ("werome"). public void windowclosing (windows) s youm exit (o); public static void & main (String avgs []) ? new Frent Handling (); Program on 10 1 Pmport java. is . +; public dan ByteArray Import & -public static void main(String[] args) throws OException & byte[] buf = {35,36,37,38]; Byte Array Inputstream by = new Byt (but) int k= 0; while (k= byt read () 1 = -1) } char ch = (char) k 80P ("K+" &"+ ch")")

Example 2 import java. is; public clan ByHAmay Input? public etatic v m (e a) throug 10 Exception by HEIJ buf = = = 35,36,37,28] Byte array input stream byt = new Byte Array Input Stream (buf) int K = 0') while (| = byt. read () 1 = -1) } char ch = (char) |e' SOP ("Arcii" + K+ " special " + (h); Example 3 Il moral and I ros public clan FILEERS PS v m (string all throws 10 Excep { FileInputstream fin = new fin (Example .+x+ ") int content; Bystem. Out. print |n (" remaining bytes "+fin-available consent = fin-read(); SOP ('Fin. availab4())

Example 4

import java. io. ID Exception;

public dan File Ex 2 &

public static void main (String all)

throws IDException &

File Input Stream Fin = new FIS ("Example");
by t() by t() = new by to [20);
int i)

char c'

i = fin read (bytes);

50P ("number"+i);

SOP ("Byses");
For (byte 3: bytes) &

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