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CB.SC.U4CYS23004

LAB 4

1)

Java programming lab 2 > LAB 4 > main.java > ...

```java
import java.util.Scanner;

class Vehicle {
    protected String type;

public Vehicle(String type){
    this.type = type;
}

public void displayType(){
    System.out.println("Vehicle Type: " + type);
    }
}

class Car extends Vehicle{

    private String brand;
    public Car(String type, String brand){
        super(type);
        this.brand = brand;
    }

    public void displayBrand(){
        System.out.println("Brand Name: " + brand);
    }
}

public class main{
    Run main | Debug main | Run | Debug
    public static void main(String[] args){
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter the car type: ");
        String type = scanner.nextLine();

        System.out.print(s:"Enter the brand name of the car: ");
        String brand = scanner.nextLine();
```

Java programming lab 2 > LAB 4 > main.java > ...

```
15  class Car extends Vehicle{
26  }
27
28  public class main{
        Run main | Debug main | Run | Debug
29      public static void main(String[] args){
30          Scanner scanner = new Scanner(System.in);
31
32          System.out.print(s:"Enter the car type: ");
33          String type = scanner.nextLine();
34
35          System.out.print(s:"Enter the brand name of the car: ");
36          String brand = scanner.nextLine();
37
38          Car myCar = new Car(type, brand);
39
40          myCar.displayType();
41          myCar.displayBrand();
42
43          scanner.close();
44      }
45  }
```

```
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deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\R
lab 2_68c5ffa1\bin" main "
Enter the car type: Sedan
Enter the brand name of the car: BMW
Vehicle Type: Sedan
Brand Name: BMW
```

Java programming lab 2 > LAB 4 > EmployeeLevelApp.java > Language Support for Java(TM) by Red Hat > Employee

```java
import java.util.Scanner;

class Employee{
    private int empId;
    private double salary;

    public Employee(int empId, double salary){
        this.empId = empId;
        this.salary = salary;
    }

    public int getEmpId() {
        return empId;
    }

    public double getSalary(){
        return salary;
    }
}

class Emplevel extends Employee{
    public Emplevel(int empId, double salary){
        super(empId, salary);
    }

    public String getLevel(){
        if (getSalary() > 10000){
            return "Level 1 (Top Management)";
        }
        else {
            return "Level 2 (Staff)";
        }
    }
}
```

2)

```java
public class EmployeeLevelApp{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter employee ID and salary: ");
        int empId = scanner.nextInt();
        double salary = scanner.nextDouble();

        Emplevel employee = new Emplevel(empId, salary);

        System.out.println("Employee ID: " + employee.getEmpId());
        System.out.println("Salary: " + employee.getSalary());
        System.out.println("Level: " + employee.getLevel());

        scanner.close();
    }
}
```

```
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deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User\wor
lab 2_68c5ffa1\bin" EmployeeLevelApp "
Enter employee ID and salary: 1234
20000
Employee ID: 1234
Salary: 20000.0
Level: Level 1 (Top Management)
```

3)

Java programming lab 2 > LAB 4 > main2.java > Language Support for Java(TM) by Red Hat > main2

```java
import java.util.Scanner;


class Account{
    private int accountNumber;
    private int accountBalance;

    public Account(int accountNumber, int accountBalance){
        this.accountNumber = accountNumber;
        this.accountBalance = accountBalance;
    }

    public int getAccountNumber(){
        return accountNumber;
    }

    public int getAccountBalance(){
        return accountBalance;
    }

    public void deposit(int amount){
        if (amount > 0){
            this.accountBalance += amount;
        }
    }
}

class User extends Account {
    private String username;

    public User(String username, int accountNumber, int accountBalance){
        super(accountNumber, accountBalance);
        this.username = username;
    }

    public String getUsername(){
        return username;
```

```
35
36      public String getUsername(){
37          return username;
38      }
39  }
40
41  public class main2 {
        Run main | Debug main | Run | Debug
42      public static void main(String[] args) {
43          Scanner scanner = new Scanner(System.in);
44          User[] users;
45
46          System.out.print(s:"Enter the number of users: ");
47          int n = scanner.nextInt();
48          users = new User[n];
49
50          for (int i = 0; i < n; i++) {
51              System.out.print(s:"Enter the username: ");
52              String username = scanner.next();
53
54              System.out.print(s:"Enter the account number: ");
55              int accountNumber = scanner.nextInt();
56
57              System.out.print(s:"Enter the initial deposit amount: ");
58              int accountBalance = scanner.nextInt();
59
60              users[i] = new User(username, accountNumber, accountBalance);
61          }
62
63          System.out.print(s:"Enter the account number to check the balance: ");
64          int searchAccountNumber = scanner.nextInt();
65
66          for (int i = 0; i < n; i++) {
67              if (users[i].getAccountNumber() == searchAccountNumber){
68                  System.out.println("Account Balance: " +users[i].getAccountBalance());
```

```
57              System.out.print(s:"Enter the initial deposit amount: ");
58              int accountBalance = scanner.nextInt();
59
60              users[i] = new User(username, accountNumber, accountBalance);
61          }
62
63          System.out.print(s:"Enter the account number to check the balance: ");
64          int searchAccountNumber = scanner.nextInt();
65
66          for (int i = 0; i < n; i++) {
67              if (users[i].getAccountNumber() == searchAccountNumber){
68                  System.out.println("Account Balance: " +users[i].getAccountBalance());
69                  scanner.close();
70                  return;
71              }
72          }
73              System.out.println(x:"Account number does not exist.");
74              scanner.close();
75          }
76      }
```

```
C:\Users\arivu\Desktop\2nd year 4th sem\Java programming\Java programming lab
deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User\wor
lab 2_68c5ffa1\bin" main2 "
Enter the number of users: 2
Enter the username: Arivumathi
Enter the account number: 123456789
Enter the initial deposit amount: 1000
Enter the username: Jeevan
Enter the account number: 121473789
Enter the initial deposit amount: 2000
Enter the account number to check the balance: 123456789
Account Balance: 1000
```

4)

Java programming lab 2 > LAB 4 > Test.java > Language Support for Java(TM) by Red Hat > Bicycle

```java
import java.util.Scanner;

class Bicycle{
    private int numberOfGears;
    private int speed;

    public Bicycle(int numberOfGears, int speed){
        this.numberOfGears = numberOfGears;
        this.speed = speed;
    }

    public int getNumberOfGears(){
        return numberOfGears;
    }

    public int getSpeed(){
        return  speed;
    }

    public String toString(){
        return "Bicycle [Number of Gears: " + numberOfGears + ", Speed: " + speed +"]";
    }
}

class MontaneBike extends Bicycle{
    private int seatHeight;

    public MontaneBike(int numberOfGears, int speed, int seatHeight){
        super(numberOfGears, speed);
        this.seatHeight = seatHeight;
    }

    public int getSeatHeight(){
        return seatHeight;
    }

    public String toString(){
```

```java
    public String toString(){
        return super.toString() + ", Seat Height: " + seatHeight + "";
    }
}

public class Test{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.println(x:"Enter the number of gears, speed and the seat height: ");
        int numberOfGears = scanner.nextInt();
        int speed = scanner.nextInt();
        int seatHeight = scanner.nextInt();

        MontaneBike montaneBike = new MontaneBike(numberOfGears, speed, seatHeight);

        System.out.println(montaneBike.toString());

        scanner.close();
    }
}
```

```
C:\Users\arivu\Desktop\2nd year 4th sem\Java programming\Java programming lab
deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User\wor
lab 2_68c5ffa1\bin" Test "
Enter the number of gears, speed and the seat height:
2
90
40
Bicycle [Number of Gears: 2, Speed: 90], Seat Height: 40
```

5)

Java programming lab 2 > LAB 4 > main3.java > ...

```java
import java.util.Scanner;

class Person {
    private String name;

    public Person (String name){
        this.name = name;
    }

    public String getName(){
        return name;
    }

    public void setName(String name){
        this.name = name;
    }

    public void display(){
        System.out.println("Name: " + name);
    }
}

class Staff extends Person {
    private int staffId;

    public Staff(String name, int staffId){
        super(name);
        this.staffId = staffId;
    }

    public int getStaffId(){
        return staffId;
    }

    public void setStaffId(int staffId){
        this.staffId = staffId;
    }
```

```
    }

    public void displayStaff(){
        super.display();
        System.out.println("Staff ID: " + staffId);
    }
}

class TemporaryStaff extends Staff {
    private int days;
    private int hoursWorked;
    private static final int SALARY_PER_HOUR = 50;

    public TemporaryStaff(String name, int staffId, int days, int hoursWorked){
        super(name, staffId);
        this.days = days;
        this.hoursWorked = hoursWorked;
    }

    public int getDays(){
        return days;
    }

    public void setDays(int days){
        this.days = days;
    }

    public int getHoursWorked(){
        return hoursWorked;
    }

    public void setHoursWorked(int hoursWorked){
```

```
    public void setHoursWorked(int hoursWorked){
        this.hoursWorked = hoursWorked;
    }

    public int calculateSalary(){
        return days * hoursWorked * SALARY_PER_HOUR;
    }

    public void displayTemporaryStaff() {
        super.displayStaff();
        System.out.println("Days Worked: " + days);
        System.out.println("Hours worked per Day: " + hoursWorked);
        System.out.println("Salary: " + calculateSalary());
    }
}

public class main3 {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter the name: ");
        String name = scanner.nextLine();

        System.out.print(s:"Enter Staff ID: ");
        int staffId = scanner.nextInt();

        System.out.print(s:"Enter the number of days worked: ");
        int days = scanner.nextInt();

        System.out.print(s:"Enter the hours worked per day: ");
        int hoursWorked = scanner.nextInt();

        TemporaryStaff tempStaff = new TemporaryStaff(name, staffId, days, hoursWorked);
        tempStaff.displayTemporaryStaff();
```

```
91          System.out.print(s:"Enter Staff ID: ");
92          int staffId = scanner.nextInt();
93
94          System.out.print(s:"Enter the number of days worked: ");
95          int days = scanner.nextInt();
96
97          System.out.print(s:"Enter the hours worked per day: ");
98          int hoursWorked = scanner.nextInt();
99
100         TemporaryStaff tempStaff = new TemporaryStaff(name, staffId, days, hoursWorked);
101         tempStaff.displayTemporaryStaff();
102
103         scanner.close();
104     }
105 }
```

```
C:\Users\arivu\Desktop\2nd year 4th sem\Java programming\Java programming lab
deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User\wor
lab 2_68c5ffa1\bin" main3 "
Enter the name: Arivumathi
Enter Staff ID: 123
Enter the number of days worked: 10
Enter the hours worked per day: 8
Name: Arivumathi
Staff ID: 123
Days Worked: 10
Hours worked per Day: 8
Salary: 4000
```