JAVA PROGRAMMING LAB EXAM

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Q1.

Inventory.java

```
package labexam;
import java.util.*;
public class Inventory {
	private String itemName;
	private double itemCost;
	private int noOfItems;

	public Inventory(String a,double b, int c) {
		itemName = a;
		itemCost = b;
		noOfItems = c;
	}

	void procureItems(int qty) throws IllegalArgumentException{
		if(noOfItems > 0)
			throw new IllegalArgumentException();
		else
			noOfItems += qty;
	}

	void sellItems(int qty) throws IllegalArgumentException {
		if(noOfItems < qty)
			throw new IllegalArgumentException();
		else
			noOfItems -= qty;
	}

	void display() {
		System.out.println("ItemName is "+itemName);
		System.out.println("Cost of this item is "+itemCost);
		System.out.println("No of items is "+noOfItems);
	}

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter the name, cost and noof items");
		Inventory obj1 = new
Inventory(sc.nextLine(),sc.nextDouble(),sc.nextInt());
		System.out.println("Displaying details");
		obj1.display();
```

```
		try {
			System.out.println("Enter the no of items procured");
			obj1.procureItems(sc.nextInt());
		}
		catch(IllegalArgumentException e) {
			System.out.println("THere are already few items!!No need to
procure now");
		}
		try {
			System.out.println("Enter the no of items sold");
			obj1.sellItems(sc.nextInt());
		}
		catch(IllegalArgumentException e) {
			System.out.println("You are selling more items than what is
available!");
		}


	}

}
```

Q2.

DepartmentFaculty.java

```
package labexam;
import java.util.*;
public abstract class DepartmentFaculty {
	protected String departmentName;
	protected String facultyName;
	protected double years_exp;
```

```
	protected DepartmentFaculty(String a,String b){
		departmentName = a;
		facultyName = b;
	}

	@Override
	public String toString() {
		String res="";
		res += "Name of the department: "+departmentName;
		res += "Name of the faculty: "+facultyName;
		res += "Years of experience: "+years_exp;
		return res;
	}

	public static void main(String[] args) {
		// TODO Auto-generated method stub

	}

}
```

TeachingFaculty.java

```
package labexam;
import java.util.*;
public class TeachingFaculty extends DepartmentFaculty implements Bonus{
	private String designation;
	private double salary;

	public void setYearsExp(double years) {
		years_exp = years;
	}
	public void setdesignation(String d) {
		designation = d;
	}
	public void setsalary(double s) {
		salary = s;
	}
	public double getYearsExp() {return years_exp;}
	public String getDesignation() {return designation;}
	public double getSalary() {return salary;}



	public TeachingFaculty(String a,String b) {
		super(a,b);
	}

	public double calculateBonus() {
		return (10*salary)/100;
	}
	public void getBonus() {
		System.out.println("Bonus obtained by "+facultyName+"is
"+calculateBonus());
	}
```

```
	@Override
	public String toString() {
		String res="";
		res += "Name of the department: "+departmentName;
		res += "\nName of the faculty: "+facultyName;
		res += "\nYears of experience: "+years_exp;
		res += "\nDesignation: "+designation;
		res += "\nSalary: "+salary;
		return res;
	}



	public static void main(String[] args) {
		// TODO Auto-generated method stub

	}

}
```

NonTeachingFaculty.java

```
package labexam;
import java.util.*;
public class NonTeachingFaculty extends DepartmentFaculty {
	private String designation;
	private double wagesPerDay;
	private int no_days;

	public NonTeachingFaculty(String a,String b) {
		super(a,b);
	}

	public void setYearsExp(double years) {
		years_exp = years;
	}
	public void setdesignation(String d) {
		designation = d;
	}
	public void setwpday(double s) {
		wagesPerDay = s;
	}
	public void setdaysworked(int s) {
		no_days = s;
	}
	public double getYearsExp() {return years_exp;}
	public String getDesignation() {return designation;}
	public double getwagespday() {return wagesPerDay;}
	public int getdaysworked() {return no_days;}
```

```
	public double CalculateSalary() {
		return no_days*wagesPerDay;
	}
	public double calculateBonus() {
		return (25*CalculateSalary())/100;
	}
	public void getBonus() {
		System.out.println("Bonus obtained by "+facultyName+"is
"+calculateBonus());
	}
	@Override
	public String toString() {
		String res="";
		res += "Name of the department: "+departmentName;
		res += "\nName of the faculty: "+facultyName;
		res += "\nYears of experience: "+years_exp;
		res += "\nDesignation: "+designation;
		res += "\nno of days worked: "+no_days;
		res += "\nWages obtained per day: "+wagesPerDay;
		res += "\nSalary: "+CalculateSalary();
		return res;
	}


	public static void main(String[] args) {
		// TODO Auto-generated method stub

	}

}
```

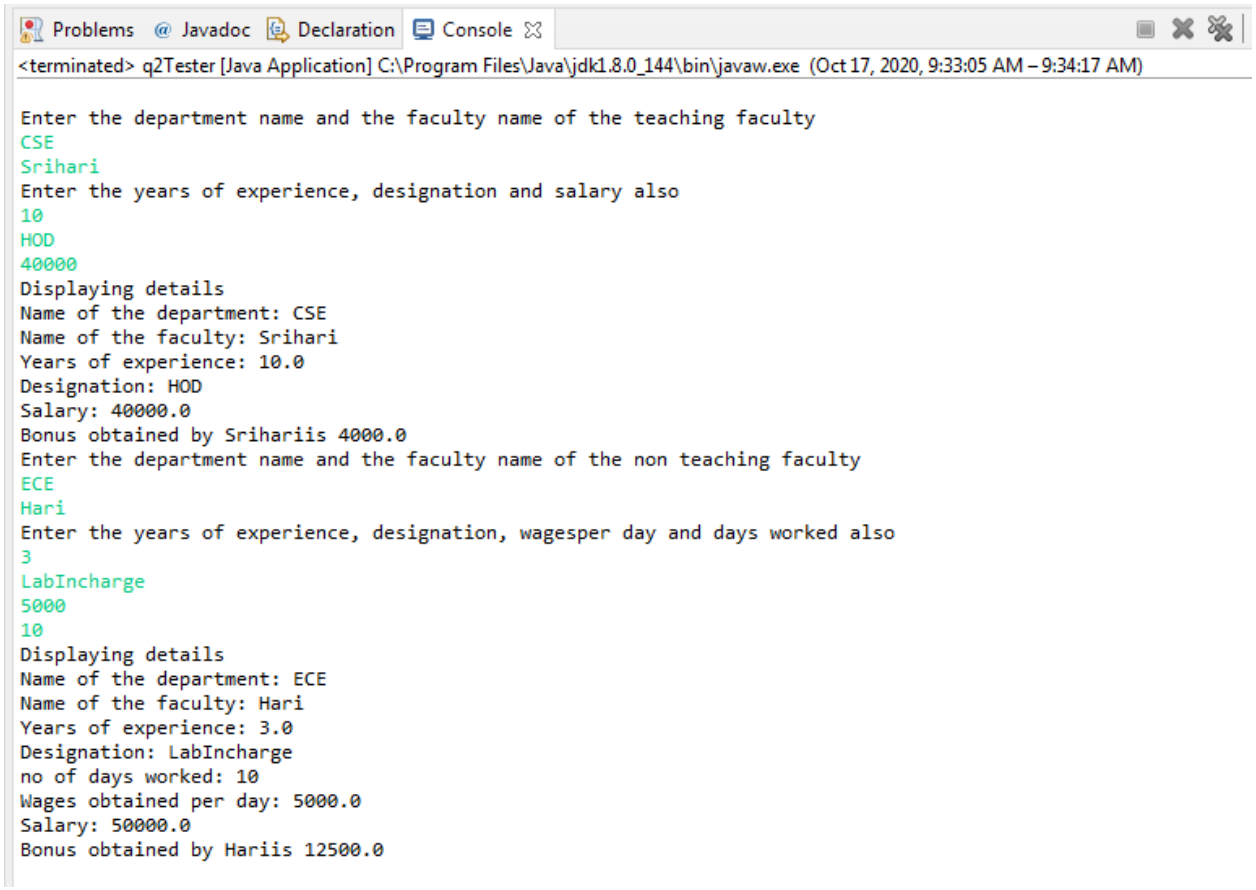
Bonus.java

```
package labexam;
import java.util.*;
public interface Bonus {
	public double calculateBonus();
}
```

Q2Tester.java

```
package labexam;
import java.util.*;
public class q2Tester {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		System.out.println();
		Scanner sc = new Scanner(System.in);

		System.out.println("Enter the department name and the faculty name of
the teaching faculty");
```

```
            TeachingFaculty obj1 = new TeachingFaculty(sc.nextLine(),sc.nextLine());
            System.out.println("Enter the years of experience, designation and
salary also");
            obj1.setYearsExp(sc.nextDouble());
            obj1.setdesignation(sc.next());
            obj1.setsalary(sc.nextDouble());

            System.out.println("Displaying details\n"+obj1.toString());
            obj1.getBonus();


            System.out.println("Enter the department name and the faculty name of
the non teaching faculty");
            NonTeachingFaculty obj2 = new NonTeachingFaculty(sc.next(),sc.next());

            System.out.println("Enter the years of experience, designation, wagesper
day and days worked also");
            obj2.setYearsExp(sc.nextDouble());
            obj2.setdesignation(sc.next());
            obj2.setwpday(sc.nextDouble());
            obj2.setdaysworked(sc.nextInt());

            System.out.println("Displaying details\n"+obj2.toString());
            obj2.getBonus();

      }

}
```


Problems
Javadoc
Declaration
Console
<terminated> q2Tester [Java Application] C:\Program Files\Java\jdk1.8.0_144\bin\javaw.exe (Oct 17, 2020, 9:33:05 AM – 9:34:17 AM)
Enter the department name and the faculty name of the teaching faculty
CSE
Srihari
Enter the years of experience, designation and salary also
10
HOD
40000
Displaying details
Name of the department: CSE
Name of the faculty: Srihari
Years of experience: 10.0
Designation: HOD
Salary: 40000.0
Bonus obtained by Sriharіis 4000.0
Enter the department name and the faculty name of the non teaching faculty
ECE
Hari
Enter the years of experience, designation, wagesper day and days worked also
3
LabIncharge
5000
10
Displaying details
Name of the department: ECE
Name of the faculty: Hari
Years of experience: 3.0
Designation: LabIncharge
no of days worked: 10
Wages obtained per day: 5000.0
Salary: 50000.0
Bonus obtained by Hariis 12500.0