**COMSATS** **University Islamabad, Lahore Campus**

**Department of Computer Science**



**Project I – Semester Fall 2020**

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| Course Title: | Object Oriented Programming-Lab | | | | Course Code: | | CSC241 | Credit Hours: | | 4(3,1) |
| Course Instructor/s: | Ms. Muntaha Iqbal | | | | Program Name: | | BCE | | | |
| Semester: | 3rd | Batch: | FA19-BCE | Section: | A | | Date: | | 03-12-2020 | |
|  |  | | | | **Maximum Marks:** | | | | **30** | |
| Student’s Name: | **Hassaan Saleem** | | | | Reg. No. | FA19-BCE-024 | | | | |
| **Important Instructions:**   * Student is himself/herself responsible for successful submission of the project on CU-Online. * Your submission must include the following in a single pdf file.   1. Code of all classes  2. Snapshot of the output of submitted code.   * Don’t waste your time in implementing irrelevant things, which are not asked. * Copied project will get zero credit. * Deadline: December 10, 2020 at 1:45pm | | | | | | | | | | |

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| --- | --- | --- | --- |
| Question # | 1 | 2 | Total |
| Obtained Marks |  |  |  |
| Total Marks | 15 | 15 | 30 |

**CL04, CLO5 -> PLO05, PLO10 -> (A3, P2, p3) Follow the instructions given below and write down the code of given problem.**

**Task 1:** Create a class Employee with following attributes empID, empName, status as enumeration wich has two possible values PermanantEmployee and VisitingEmployee. Create a class Department which depName and depEmployees(of type Employee). All attributes are privates and exposed via getter and setter. Both classes have a fully parameterized constructor.

**Task 2:** In main class, create an Arraylist of Department. Create a static method to **insertData()** to add data in ArrayList( Ask user to input data in the list). Create another method **deleteData()** which will delete specific employee from given index. Create another method named **updateData()** which will update status of an employee. Create another method **displayData()** which will print data of departments.

**Code:**

**public class Employee{**

**private int empID;**

**private String empName;**

**private String EmpStatus;**

**public String getEmpStatus() {**

**return EmpStatus;**

**}**

**public void setEmpStatus(String EmpStatus) {**

**this.EmpStatus = EmpStatus;**

**}**

**public int getEmpID() {**

**return empID;**

**}**

**public void setEmpID(int empID) {**

**this.empID = empID;**

**}**

**public String getEmpName() {**

**return empName;**

**}**

**public void setEmpName(String empName) {**

**this.empName = empName;**

**}**

**public Employee(int empID, String empName,String EmpStatus) {**

**setEmpID(empID);**

**setEmpName(empName);**

**setEmpStatus(EmpStatus);**

**}**

**public Employee(){**

**}**

**public void setEmpStatus(EmpStatus empStatus){**

**}**

**}**

**public enum EmpStatus{**

**PermanentEmployee,VisitingEmployee**

**}**

**public class Department{**

**private String DepName;**

**private Employee DepEmployees;**

**public Department(){**

**}**

**public Department(String DepName, Employee DepEmployees) {**

**setDepName(DepName);**

**setDepEmployees(DepEmployees);**

**}**

**public String getDepName() {**

**return DepName;**

**}**

**public void setDepName(String DepName) {**

**this.DepName = DepName;**

**}**

**public Employee getDepEmployees() {**

**return DepEmployees;**

**}**

**public void setDepEmployees(Employee DepEmployees) {**

**this.DepEmployees = DepEmployees;**

**}**

**}**

**import java.util.Scanner;**

**import java.util.ArrayList;**

**public class EmployeeMain {**

**public static void main(String[] args) {**

**ArrayList<String> Department = new ArrayList<>();**

**}**

**public static void InsertData(ArrayList<Department> Department, String EmployeeStatus){**

**Department d1 = new Department();**

**Employee e1 = new Employee();**

**Scanner input = new Scanner(System.in);**

**System.out.println("Enter number of departments:");**

**int noOfDepartments = input.nextInt();**

**for(int i=0;i<noOfDepartments;i++){**

**System.out.println("Enter department name:");**

**String DepartmentName=input.nextLine();**

**d1.setDepName(DepartmentName);**

**System.out.println("Enter employee name:");**

**String EmployeeName = input.nextLine();**

**e1.setEmpName(EmployeeName);**

**System.out.println("Enter employee ID");**

**int EmployeeID = input.nextInt();**

**e1.setEmpID(EmployeeID);**

**System.out.println("Enter employee Sttaus:");**

**String Status = input.nextLine();**

**Enum employeeStatus = Enum.valueOf(EmpStatus.class, Status);**

**if (Status.equals("Permanent Employee")) {**

**e1.setEmpStatus(EmpStatus.PermanentEmployee);**

**}**

**else if (Status.equals("Visiting Employee")) {**

**e1.setEmpStatus(EmpStatus.VisitingEmployee);**

**}**

**Employee employee = new Employee(EmployeeID,EmployeeName,EmployeeStatus);**

**Department department1 = new Department(DepartmentName, employee);**

**Department.add(department1);**

**}**

**}**

**public static void deleteData(ArrayList <Department> department){**

**Scanner input = new Scanner(System.in);**

**System.out.print("Enter index number of employee you want to delete: ");**

**int indexNumber = input.nextInt();**

**if(indexNumber > department.size()){**

**System.out.println("Index Number is not present");**

**}**

**else{**

**department.remove(indexNumber);**

**}**

**}**

**public static void UpdateData(ArrayList<Department> Department, String EmployeeStatus){**

**Department d1 = new Department();**

**Employee e1 = new Employee();**

**Scanner input = new Scanner(System.in);**

**System.out.println("Enter number of departments:");**

**int noOfDepartments = input.nextInt();**

**for(int i=0;i<noOfDepartments;i++){**

**System.out.println("Enter department name:");**

**String DepartmentName=input.nextLine();**

**d1.setDepName(DepartmentName);**

**System.out.println("Enter employee name:");**

**String EmployeeName = input.nextLine();**

**e1.setEmpName(EmployeeName);**

**System.out.println("Enter employee ID");**

**int EmployeeID = input.nextInt();**

**e1.setEmpID(EmployeeID);**

**System.out.println("Enter employee Sttaus:");**

**String Status = input.nextLine();**

**Enum employeeStatus = Enum.valueOf(EmpStatus.class, Status);**

**if (Status.equals("Permanent Employee")) {**

**e1.setEmpStatus(EmpStatus.PermanentEmployee);**

**}**

**else if (Status.equals("Visiting Employee")) {**

**e1.setEmpStatus(EmpStatus.VisitingEmployee);**

**}**

**Employee employee = new Employee(EmployeeID,EmployeeName,EmployeeStatus);**

**Department department1 = new Department(DepartmentName, employee);**

**Department.add(department1);**

**}**

**}**

**}**

**Output:**

**Not enough time thank you**

**Screenshot:**

**Not enough time thank you**