Question 1)

a.)

we can’t make 2 public class in one java file . if we need to create 2 classes in one file , we need to make one public and others are private.

To fix this error :  
we need to change “public class A” into “class A” also need to change “private int a” to “public int a” . file should be name as “OOPExercises.java”

b.)

we can’t make 2 public class in one java file . if we need to create 2 classes in one file , we need to make one public and others are private.

To fix this error :

We need to change “public class A” into “class A” also need to change “private int a=100” to “private static int a=100” also method in the class change as static methods

c.)

double result = 55; change into int results =55;

d.)

change final int a = 100; into int a=100;

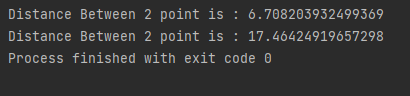
Question 2)

***Point.java***

public class Point {  
 int x;  
 int y;  
  
 public Point(int a, int b){  
 this.x = a;  
 this.y = b;  
 }  
 public String displayPoint(){  
 return "Coordinates: ("+x+","+y+")";  
 }  
  
 public String distance(int a, int b){  
 return "Distance Between 2 point is : "+  
 Math.*sqrt*(Math.*pow*(Math.*abs*(x-a),2)+Math.*pow*(Math.*abs*(y-b),2));  
 }  
  
 public String distance(){  
 return "Distance Between 2 point is : "+(Math.*sqrt*((x\*x)+(y\*y)));  
 }  
  
  
  
  
  
}

***PointClient.java***

public class PointClient {  
  
 public static void main(String[] args) {  
 Point obj1 = new Point(20,2);  
 Point obj2 = new Point(3,6);  
  
 String second = obj1.distance(3,6);  
 String first = obj2.distance();  
 System.*out*.println(first);  
 System.*out*.printf(second);  
 }  
  
  
  
}



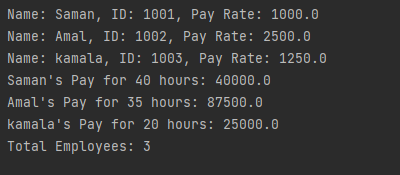
Question 3)

***Employee.java***

public class Employee {  
 String name;  
 int idNumber;  
 double payRate;  
 static int *employeeCounter* =0;  
  
 Employee(String name,Double payRate){  
 this.name = name;  
 this.payRate = payRate;  
 *employeeCounter*++;  
 this.idNumber = *employeeCounter* +1000;  
 }  
  
 public double calcPay(double hours){  
 return hours\*payRate;  
 }  
  
 public static int numberOfEmployees(){  
 return *employeeCounter*;  
 }  
}

***EmployeeTest.java***

import java.io.FilterOutputStream;  
  
public class EmployeeTest {  
 public static void main(String[] args) {  
 Employee obj1 = new Employee("Saman",1000.0);  
 Employee obj2 = new Employee("Amal",2500.0);  
 Employee obj3 = new Employee("kamala",1250.0);  
  
 double samanPay= obj1.calcPay(40);  
 double amalPay = obj2.calcPay(35);  
 double kamalaPay= obj3.calcPay(20);  
  
 System.*out*.println("Name: "+obj1.name+", ID: "+obj1.idNumber+", Pay Rate: "+obj1.payRate);  
 System.*out*.println("Name: "+obj2.name+", ID: "+obj2.idNumber+", Pay Rate: "+obj2.payRate);  
 System.*out*.println("Name: "+obj3.name+", ID: "+obj3.idNumber+", Pay Rate: "+obj3.payRate);  
  
 System.*out*.println(obj1.name+"'s Pay for 40 hours: "+samanPay);  
 System.*out*.println(obj2.name+"'s Pay for 35 hours: "+amalPay);  
 System.*out*.println(obj3.name+"'s Pay for 20 hours: "+kamalaPay);  
  
  
 System.*out*.println("Total Employees: "+Employee.*employeeCounter*);  
 }  
  
}



Question 4)

***Cinema.java***

public class Cinema {  
 Ticket[] tickets;  
 int ticketCount;  
  
 Cinema(int capacity) {  
 this.ticketCount = 0;  
 tickets = new Ticket[capacity];  
 }  
  
 public void bookTicket(Ticket ticket) {  
 if (ticketCount < tickets.length) {  
 tickets[ticketCount] = ticket;  
 ticketCount++;  
 } else {  
 System.*out*.println("No more tickets available");  
 }  
 }  
  
 public void displayAllTickets() {  
 System.*out*.println("All Booked Tickets:");  
 for (int i = 0; i < ticketCount; i++) {  
 tickets[i].displayTicket(); // Display each ticket  
 }  
 }  
}

***cinemabookingsys.java***

public class cinemabookingsys {  
 public static void main(String[] args) {  
 Movie movie1 = new Movie("Avatar 2", 180);  
 Movie movie2 = new Movie("Interstellar", 165);  
 Cinema cinema = new Cinema(3);  
 cinema.bookTicket(new Ticket(movie1, "A1", 1200.00));  
 cinema.bookTicket(new Ticket(movie2, "B5", 1500.00));  
  
 cinema.displayAllTickets();  
 }  
}

***Ticket.java***

public class Ticket {  
 Movie movie;  
 String seatNumber;  
 double price;  
  
 Ticket(Movie movie,String seatNumber ,double price){  
 this.movie = movie;  
 this.seatNumber = seatNumber;  
 this.price =price;  
 }  
  
 public void displayTicket(){  
 movie.displayMovieDetails();  
 System.*out*.println("Seat no: "+seatNumber+" ,Price: "+price);  
 }  
  
}

***Movie.java***

public class Movie {  
 String name;  
 int duration;  
  
 Movie(String name,int duration){  
 this.name = name;  
 this.duration = duration;  
 }  
  
 public String getName(){  
 return name;  
 }  
  
 public int getDuration(){  
 return duration;  
 }  
  
 public void displayMovieDetails(){  
 System.*out*.println("Movie Name: "+name+" ,Duration: "+duration);  
 }  
  
}

A screen shot of a computer

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Question 5 )

***Patient.java***

public class Patient {  
 String patientID;  
 String name;  
 String disease;  
  
  
 public void displayDetails(){  
 System.*out*.println("Patient ID: "+patientID+" Patient Name: "+ name+" Disease: "+disease);  
 }  
  
}

***Doctor.java***

public class Doctor {  
 String doctorID;  
 String name;  
 String specialization;  
  
 public void treatPatient(Patient patient){  
 System.*out*.println("Dr."+name+" is teating "+patient.name+ " for "+patient.disease);  
 }  
}

***DoctorPatient.java***

public class DoctorPatient {  
 public static void main(String []args){  
 Patient patient1 = new Patient();  
 patient1.patientID="P001";  
 patient1.name="Kavindu";  
 patient1.disease = "fever";  
  
 Patient patient2 = new Patient();  
 patient2.patientID="P002";  
 patient2.name="Ravindu";  
 patient2.disease = "headache";  
  
 patient1.displayDetails();  
 patient2.displayDetails();  
  
 Doctor doctor1 = new Doctor();  
 doctor1.doctorID = "D001";  
 doctor1.name ="Supun";  
 doctor1.specialization = "ENT";  
  
 Doctor doctor2 = new Doctor();  
 doctor2.doctorID = "D002";  
 doctor2.name ="Kasun";  
 doctor2.specialization = "Virus";  
  
 doctor1.treatPatient(patient1);  
 doctor2.treatPatient(patient2);  
 }  
}

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Question 6)

***Dish.java***

public class Dish {  
 String name;  
 double price;  
  
 Dish(String name,double price){  
 this.name = name;  
 this.price = price;  
 }  
  
 public void displayDish(){  
 System.*out*.println("Name: "+name+" Price: "+price);  
 }  
}

***Order.java***

public class Order {  
 Dish dish;  
 int quantity;  
  
 Order(Dish dish,int quantity){  
 this.dish = dish;  
 this.quantity = quantity;  
 }  
  
 public double calculateTotal(){  
 return dish.price\*quantity;  
 }  
  
 public void displayOrderDetails() {  
 System.*out*.println("Order: " + dish.name + ", Quantity: " + quantity +  
 ", Total Price: " + calculateTotal());  
 }  
}

***Restaurant.java***

public class Restaurant {  
 Order[] orders;  
 int orderCount;  
 int currentOrderCount;  
  
// static int p =0;  
  
 Restaurant(int orderCount){  
 orders = new Order[orderCount];  
 this.currentOrderCount = 0;  
  
 }  
  
 public void addOrder(Order order){  
 if (true) {  
 orders[currentOrderCount] = order;  
 currentOrderCount++;  
 } else {  
 System.*out*.println("Cannot add more orders. Maximum capacity reached.");  
 }  
 }  
  
  
 public void displayAllOrders() {  
 System.*out*.println("All Orders:");  
 for (int i = 0; i < currentOrderCount; i++) {  
 orders[i].displayOrderDetails();  
 }  
 }  
}

***RestaurantManagement.java***

public class RestaurantManagement {  
 public static void main(String[] args) {  
 Dish dish1 = new Dish("Pasta", 550.00);  
 Dish dish2 = new Dish("Pizza", 1200.00);  
 Restaurant restaurant = new Restaurant(3);  
 restaurant.addOrder(new Order(dish1, 2));  
 restaurant.addOrder(new Order(dish2, 1));  
 restaurant.addOrder(new Order(dish2, 5));  
 // restaurant.addOrder(new Order(dish1, 3));  
  
 restaurant.displayAllOrders();  
 }  
}

