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Section: **CSE-A**

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Subject: **JAVA OOPS**

Aim: Create an Employee Attendance Management System (EMS).

A. Design a Class Time with data members as hours, minutes and seconds. This class provides the functionality to Add and Subtract two time objects. The result will be returned in a new time object.

B. Create a class to store Attendance. The attendance will have Time_IN , Time_OUT along with date information.

C. Create a class Employee with employee name, id, name, age, designation, salary, Attendance[].

a. Provide the functionality to count the number of hours worked in a month.

b. Display the number of working hours of an employee for a given date.

Write appropriate constructors and display function where required.

Code:

TIME CLASS:

```
package Practical2;

public class time {
    int h,m,s;
    int h1,m1,s1;
    time(int h,int m,int s) {
        this.h=h;
        this.m=m;
```

```

        this.s=s;
    }
    time add(time a,time b){
        System.out.println("The addition of time is: ");
        time c=new time(0,0,0);
        c.h=a.h+b.h;
        if(c.h>=24){
            c.h=c.h%24;
        }
        c.m=a.m+b.m;
        if(c.m>=60){
            c.m=c.m%60;
            c.h++;
        }
        c.s=a.s+b.s;
        if(c.s>=60){
            c.s=c.s%60;
            c.m++;
        }
        display(c);
        return c;
    }
    time sub(time a,time b){
        System.out.println("The Subtraction of time is: ");
        time c=new time(0,0,0);
        c.h=a.h-b.h;
        c.m=a.m-b.m;
        c.s=a.s-b.s;
        if(c.h<0){
            c.h=c.h*(-1);
        }
        if(c.m<0){
            c.m=c.m*(-1);
        }
        if(c.s<0){
            c.s=c.s*(-1);
        }
        if(c.h>=24){
            c.h=0;
        }
    }

```

```

        if(c.m>=60){
            c.m=c.m%60;
            c.h++;
        }
        if(c.s>=60){
            c.s=c.s%60;
            c.m++;
        }
        display(c);
        return c;
    }
    void display(time x){
        System.out.println("The Final Time is\n"+x.h+" : "+x.m+" : "+x.s);
    }
}

```

ATTENDANCE CLASS:

```

package Practical2;

public class attendance {
    time a,b;
    attendance(time a,time b){
        this.a=a;
        this.b=b;
    }
    time attended(time a,time b){
        System.out.println("The time for which office is attended is:");
        time c=new time(0,0,0);
        c=a.sub(a, b);
        return c;
    }
}

```

EMPLOYEE CLASS:

```
package Practical2;

public class employee {
    String name,designation;
    int id,age,salary,s;
    time t=new time(0,0,0);
    time x1=new time(10,30,15);
    time y1=new time(17,45,9);
    time x2=new time(1,32,55);
    time y2=new time(7,45,39);
    time x3=new time(9,30,15);
    time y3=new time(15,5,17);
    time x4=new time(19,30,50);
    time y4=new time(23,0,1);
    time x5=new time(10,39,17);
    time y5=new time(17,27,56);
    attendance q=new attendance(x1, y1);
    attendance w=new attendance(x2, y2);

    employee(String name,int id,int age,String designation,int salary){
        this.name=name;
        this.id=id;
        this.age=age;
        this.designation=designation;
        this.salary=salary;
    }

    void calculation(){
        t=w.attended(x2,y2);
    }

    void print(){
        System.out.println("Name: "+name+" ID: "+id+" Age: "+age+"
Designation: "+designation+" Salary: "+salary);
        calculation();
    }
}
```

MAIN CLASS:

```
package Practical2;
public class Main {
    public static void main(String[] args){
        time a=new time(2,3,4);
        time b=new time(4,4,4);
        System.out.println("Addition of time: ");
        a.add(a, b);
        System.out.println("Subtraction of time: ");
        a.sub(a, b);
        attendance x = new attendance(a, b);
        System.out.println("Attended time is : ");
        x.attended(a, b);
        System.out.println("Employee : ");
        employee e1=new employee("Jay", 9, 30, "HR", 135000);
        System.out.println("The final working time of jay is: ");
        e1.print();
        employee e2=new employee("Prathmesh", 81, 29, "HR", 145000);
        System.out.println("The final working time of Prathmesh is: ");
        e2.print();
    }
}
```

OUTPUT:

```
3ca88934d03e8be\redhat.java\jdt_ws\Java_cc94c46d\bin' 'Practical2.Main'
Addition of time:
The addition of time is:
The Final Time is
6 : 7 : 8
Subtraction of time:
The Subtraction of time is:
The Final Time is
2 : 1 : 0
Attended time is :
The time for which office is attended is:
The Subtraction of time is:
The Final Time is
2 : 1 : 0
Employee :
The final working time of jay is:
Name: Jay ID: 9 Age: 30 Designation: HR Salary: 135000
The time for which office is attended is:
The Subtraction of time is:
The Final Time is
6 : 13 : 16
The final working time of Prathmesh is:
Name: Prathmesh ID: 81 Age: 29 Designation: HR Salary: 145000
The time for which office is attended is:
The Subtraction of time is:
The Final Time is
6 : 13 : 16
```

RESULT:

Successful execution of practical 2 AMS is created