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Q1. **Apply object oriented techniques to build a program for SSUET Learning Management system in which Account class is created having protected attribute username and password and Show_attendance() in which complete attendance is displayed. Create Student, Teacher, Admin subclasses of Account in which private attributes are user_id, first_name, father_name, depart_name, total_working_days and presents in all three subclasses. All three classes has Calculate_Attendence() method that will calculate their absents. Define parameterized constructors and also some methods that are discussed below.**

Create a menu for taking input from user. For Student press 1 , for Teacher press 2 and for Admin press 3. After taking user input for student, a menu will appear, 1 for calling show_attendance() 2 for calling Attempt_Quiz() 3 for calling Query(). Where asAttempt_Quiz() will ask first whether student has attempt a quiz if yes print you have already attempted. If not show quiz question set by teacher. Query() method will prompt user to ask any query that will show to Teacher.

For user input 2 for Teacher, a menu will appear, 1 for Show_Attendance(), 2 for Create_Quiz(), 3 for Reply_Query(). Show_attendence() is overridden method for student and teacher.

Reply_Query() method will check if any query generated from student, display reply to student

For user input 3 for Admin print you don't have any admin rights.

Source code:

```java
package account;
public class Student extends Account {
private String user_id,first_name,father_name,depart_name;
private int total_working_days,presents;
String query,ans,ans1;
Teacher ob=new Teacher();
Student(){}
Student(String user,String name,String fname,String depart, int days,int pres){
user_id=user;
first_name=name;
father_name=fname;
depart_name=depart;
total_working_days=days;
presents=pres;
}
public double calculate_attendence(){
return total_working_days-presents;
}
public void Show_attendence(){
System.out.println("Your user id is:"+user_id);
System.out.println("Your name is:"+first_name);
System.out.println("Your father name is:"+father_name);
System.out.println("Total working days are:"+total_working_days);
System.out.println("Your absents are:"+calculate_attendence());
System.out.println("Your presents are:"+presents);
}
public void Query(){
System.out.println("You can ask any query from your teacher:");
}
public void Attempt_Quiz(){
```

```java
        if(ob.question1!=null&&ob.question2!=null){
System.out.println(ob.question1);
System.out.println(ob.question2);
System.out.println("Answer of both questions:");
}
else{
System.out.println("Hurray no quiz generated!");      }           }           }
package account;
public class Teacher extends Account {
private String user_id,first_name,father_name,depart_name;
private int total_working_days,presents;
String question1,question2,reply;
static Student obj2=new Student();
Teacher(){}
Teacher(String user,String name,String fname,String depart, int days,int pres){
user_id=user;
first_name=name;
father_name=fname;
depart_name=depart;
total_working_days=days;
presents=pres;
}
public double calculate_attendence(){
return total_working_days-presents;
}
public void Show_attendence(){
System.out.println("Your user id is:"+user_id);
System.out.println("Your name is:"+first_name);
System.out.println("Your father name is:"+father_name);
System.out.println("Total working days are:"+total_working_days);
System.out.println("Your absents are:"+calculate_attendence());
System.out.println("Your presents are:"+presents);
}
public void Create_Quiz(){
System.out.println("Enter two questions:");
}
public void Reply_Query(){
if(obj2.query!=null){
System.out.println("Student query"+obj2.query);
System.out.println("Reply to Student query"+obj2.query);
}
}
}
package account;
public class Admin extends Account {
private String user_id,first_name,father_name,depart_name;
private int total_working_days,presents;
Admin(String user,String name,String fname,String depart, int days,int pres){
user_id=user;
first_name=name;
father_name=fname;
depart_name=depart;
total_working_days=days;
presents=pres;
}
public double calculate_attendence(){
```

```java
return total_working_days-presents;
}
}
package account;
import java.util.Scanner;
abstract public class Account {
protected static String username,password;
static Teacher obj=new Teacher("Asad12","Asad","Shehzad","CE",30,25);
public void Show_attendence(){
}
static Student obj1=new Student("Ahmad12","Ahmad","Hashim","CE",20,18);
public static void main(String[] args){
Scanner sc=new Scanner(System.in);
System.out.println("Plz enter no from 1 to 3:\n"
+ " 1: for Student\n 2: "
+ "for Teacher\n "
+ "3: for Admin\n");
int input=sc.nextInt();
switch(input){
case 1:
System.out.println("Press 1: for show_attendence()");
System.out.println("Press 2: for Attempt_Quiz()");
System.out.println("Press 3: for Query()");
int input1=sc.nextInt();
switch(input1){
case 1:
obj1.Show_attendence();
break;
case 2:
obj1.Attempt_Quiz();
obj1.ans=sc.next();
obj1.ans1=sc.next();
break;
case 3:
obj1.Query();
obj1.query=sc.next();
System.out.println("Plz wait for the best we are processing:");
break;
default:
System.out.println("Wrong input");
}
break;
case 2:
System.out.println("Press 1: for show_attendence()");
System.out.println("Press 2: for Create_Quiz()");
System.out.println("Press 3: for Reply_Query()");
int input2=sc.nextInt();
switch(input2){
case 1:
obj.Show_attendence();
break;
case 2:
obj.Create_Quiz();
obj.question1=sc.next();
obj.question2=sc.next();
System.out.println("Successfully created:");
```

```
break;
case 3:
if(obj1.query!=null){
System.out.println("Stduent query:"+obj1.query);
obj.Reply_Query();
obj.reply=sc.next();
System.out.println("Replied Successfully");}
else{
System.out.println("No query");}
break;
default:
System.out.println("Wrong input");
}
break;
case 3:
System.out.println("You dont have any admin rights!");
break;
default:
System.out.println("Wrong input");
}
}
}
```

Output:
Plz enter no from 1 to 3:
 1: for Student
 2: for Teacher
 3: for Admin
3
You dont have any admin rights!

Running again:
Plz enter no from 1 to 3:
 1: for Student
 2: for Teacher
 3: for Admin
1
Press 1: for show_attendence()
Press 2: for Attempt_Quiz()
Press 3: for Query()
2
Hurray no quiz generated!

Running again:
Plz enter no from 1 to 3:
 1: for Student
 2: for Teacher
 3: for Admin
1
Press 1: for show_attendence()
Press 2: for Attempt_Quiz()
Press 3: for Query()
3
You can ask any query from your teacher:
i cant access my vle
Plz wait for the best we are processing: