TEST-5

JAVA-CSA0961

M.Indu

192372101

1)

import java.util.\*;

class Student {

private int studentId;

private String studentName;

private Map<String, Boolean> attendanceRecords;

public Student(int studentId, String studentName) {

this.studentId = studentId;

this.studentName = studentName;

this.attendanceRecords = new HashMap<>();

}

public void markAttendance(String date, boolean isPresent) {

attendanceRecords.put(date, isPresent);

}

public void generateAttendanceReport() {

System.out.println("Attendance report for Student ID: " + studentId + ", Name: " + studentName);

for (Map.Entry<String, Boolean> entry : attendanceRecords.entrySet()) {

System.out.println("Date: " + entry.getKey() + " - Present: " + entry.getValue());

}

}

public double calculateAttendancePercentage() {

if (attendanceRecords.isEmpty()) {

return 0.0; // If no records are present, attendance percentage is 0

}

int totalClasses = attendanceRecords.size();

long presentCount = attendanceRecords.values().stream().filter(present -> present).count();

return (presentCount \* 100.0) / totalClasses;

}

public int getStudentId() {

return studentId;

}

}

class AttendanceSystem {

private Map<Integer, Student> studentsMap;

public AttendanceSystem() {

this.studentsMap = new HashMap<>();

}

public void addStudent(int studentId, String studentName) {

if (!studentsMap.containsKey(studentId)) {

studentsMap.put(studentId, new Student(studentId, studentName));

System.out.println("Student added successfully: " + studentName);

} else {

System.out.println("Student with ID " + studentId + " already exists.");

}

}

public void markAttendance(int studentId, String date, boolean isPresent) {

if (studentsMap.containsKey(studentId)) {

studentsMap.get(studentId).markAttendance(date, isPresent);

System.out.println("Attendance marked for Student ID: " + studentId + ", Date: " + date);

} else {

System.out.println("Student with ID " + studentId + " does not exist.");

}

}

public void generateAttendanceReport(int studentId) {

if (studentsMap.containsKey(studentId)) {

studentsMap.get(studentId).generateAttendanceReport();

} else {

System.out.println("Student with ID " + studentId + " does not exist.");

}

}

public void calculateAttendancePercentage(int studentId) {

if (studentsMap.containsKey(studentId)) {

double attendancePercentage = studentsMap.get(studentId).calculateAttendancePercentage();

System.out.printf("Attendance percentage for Student ID %d: %.2f%%\n", studentId, attendancePercentage);

} else {

System.out.println("Student with ID " + studentId + " does not exist.");

}

}

}

public class Main {

public static void main(String[] args) {

AttendanceSystem attendanceSystem = new AttendanceSystem();

attendanceSystem.addStudent(1, "Alice");

attendanceSystem.addStudent(2, "Bob");

attendanceSystem.markAttendance(1, "2024-07-24", true);

attendanceSystem.markAttendance(2, "2024-07-24", false);

attendanceSystem.markAttendance(1, "2024-07-25", true);

attendanceSystem.markAttendance(2, "2024-07-25", true);

attendanceSystem.generateAttendanceReport(1);

attendanceSystem.generateAttendanceReport(2);

attendanceSystem.calculateAttendancePercentage(1);

attendanceSystem.calculateAttendancePercentage(2);

}

}

OUTPUT: Student added successfully: Alice

Student added successfully: Bob

Attendance marked for Student ID: 1, Date: 2024-07-24

Attendance marked for Student ID: 2, Date: 2024-07-24

Attendance marked for Student ID: 1, Date: 2024-07-25

Attendance marked for Student ID: 2, Date: 2024-07-25

Attendance report for Student ID: 1, Name: Alice

Date: 2024-07-24 - Present: true

Date: 2024-07-25 - Present: true

Attendance report for Student ID: 2, Name: Bob

Date: 2024-07-24 - Present: false

Date: 2024-07-25 - Present: true

Attendance percentage for Student ID 1: 100.00%

Attendance percentage for Student ID 2: 50.00%

2) public class WeatherForecastApp {

public String getCurrentWeather(String location) {

return "Current weather for " + location;

}

public String getWeeklyForecast(String location) {

return "Weekly forecast for " + location;

}

public void displayWeatherDetails(String location) {

System.out.println("Weather details for " + location);

}

public static void main(String[] args) {

WeatherForecastApp app = new WeatherForecastApp();

String location = "chennai";

String currentWeather = app.getCurrentWeather(location);

System.out.println(currentWeather);

String weeklyForecast = app.getWeeklyForecast(location);

System.out.println(weeklyForecast);

app.displayWeatherDetails(location);

}

}

OUTPUT:

Current weather for chennai

Weekly forecast for chennai

Weather details for chennai

------------------------END-------------------------