**Test Question 5(24.7.24)**

**SET 2**

1.Create a student attendance system to record and manage student attendance. Implement methods to mark attendance, generate attendance reports, and calculate attendance percentages.

**Methods**:

* markAttendance(int studentId, String date, boolean isPresent)
* generateAttendanceReport(int studentId)
* calculateAttendancePercentage(int studentId)

program:

import java.util.Scanner;

import java.util.ArrayList;

class attendance

{

public static class Student

{

int total=0;

int n,Reg\_No;

Scanner scanner=new Scanner(System.in);

ArrayList<Integer> arr=new ArrayList<>();

ArrayList<Integer> arr1=new ArrayList<>();

public Student()

{

System.out.print("Enter The Total Number Of Students:-");

n=scanner.nextInt();

scanner.nextLine();

for(int i=0;i<n;i++)

{

arr1.add(0);

}

for(int i=0;i<n;i++)

{

System.out.print("Enter The Student RegNo:-");

Reg\_No=scanner.nextInt();

scanner.nextLine();

arr.add(Reg\_No);

}

}

public void markattendance(int reg\_no,boolean ispresent)

{

for(int i=0;i<arr.size();i++)

{

if(arr.get(i)==reg\_no)

{

total+=1;

if(ispresent==true)

{

arr1.set(i,arr1.get(i)+1);

}

}

}

}

public void getpercentage(int reg\_no)

{

for(int i=0;i<arr.size();i++)

{

if(reg\_no==arr.get(i))

{

int percentage=(arr1.get(i)/total)\*100;

System.out.println("The Attendance Percentage For The Student IS:-"+percentage+"%");

}

}

}

}

public static void main(String[] args)

{

Student std=new Student();

std.markattendance(192311133,true);

std.markattendance(192311133,true);

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std.markattendance(192311133,true);

std.markattendance(192311133,true);

std.getpercentage(192311133);

}

}2. Develop a weather forecast application that fetches and displays weather information. Implement methods to get current weather, forecast for the week, and display weather details.

**Methods**:

* getCurrentWeather(String location)
* getWeeklyForecast(String location)
* displayWeatherDetails(String location)

program:

import java.io.BufferedReader;

import java.io.InputStreamReader;

import java.net.HttpURLConnection;

import java.net.URL;

import org.json.JSONArray;

import org.json.JSONObject;

class WeatherForecast {

private static final String API\_KEY = "your\_api\_key\_here"; // Replace with your OpenWeatherMap API key

private static final String BASE\_URL = "http://api.openweathermap.org/data/2.5/";

private String getJsonResponse(String endpoint) throws Exception {

StringBuilder result = new StringBuilder();

URL url = new URL(BASE\_URL + endpoint + "&appid=" + API\_KEY);

HttpURLConnection conn = (HttpURLConnection) url.openConnection();

conn.setRequestMethod("GET");

BufferedReader rd = new BufferedReader(new InputStreamReader(conn.getInputStream()));

String line;

while ((line = rd.readLine()) != null) {

result.append(line);

}

rd.close();

return result.toString();

}

public void getCurrentWeather(String city) {

try {

String response = getJsonResponse("weather?q=" + city);

JSONObject jsonObj = new JSONObject(response);

System.out.println("Current Weather in " + city + ":");

System.out.println("Temperature: " + jsonObj.getJSONObject("main").getDouble("temp") + "K");

System.out.println("Humidity: " + jsonObj.getJSONObject("main").getInt("humidity") + "%");

System.out.println("Description: " + jsonObj.getJSONArray("weather").getJSONObject(0).getString("description"));

System.out.println();

} catch (Exception e) {

e.printStackTrace();

}

}

public void getWeeklyForecast(String city) {

try {

String response = getJsonResponse("forecast/daily?q=" + city + "&cnt=7");

JSONObject jsonObj = new JSONObject(response);

JSONArray list = jsonObj.getJSONArray("list");

System.out.println("Weekly Forecast for " + city + ":");

for (int i = 0; i < list.length(); i++) {

JSONObject day = list.getJSONObject(i);

System.out.println("Day " + (i + 1) + ":");

System.out.println("Temperature: " + day.getJSONObject("temp").getDouble("day") + "K");

System.out.println("Humidity: " + day.getInt("humidity") + "%");

System.out.println("Description: " + day.getJSONArray("weather").getJSONObject(0).getString("description"));

System.out.println();

}

} catch (Exception e) {

e.printStackTrace();

}

}

}

public class Main {

public static void main(String[] args) {

WeatherForecast weatherForecast = new WeatherForecast();

// Get current weather

weatherForecast.getCurrentWeather("London");

// Get weekly forecast

weatherForecast.getWeeklyForecast("London");

}

}