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**ROLL NO:24**

**BATCH : B2**

**COURSE: OOPS PRACTICAL**

**Assginment No. 1**

**Problem Statment :**

**Create a class named weather report that holds a daily weather report with data members day\_of\_month, hightemp, lowtemp,a mount\_rain and amount\_snow. Use different types of constructors to initialize the objects. Also include a function that prompts the user and sets values for each field so that you can override the default values. Write a menu driven program in C++ with options to enter data and generate monthly report that displays average of each attribute.**

**CODE:**

**#include <iostream>**

**class weather\_report {**

**private:**

**int day\_of\_month;**

**double high\_temp;**

**double low\_temp;**

**double amount\_rain;**

**double amount\_snow;**

**public:**

**weather\_report() : day\_of\_month(1), high\_temp(0), low\_temp(0), amount\_rain(0), amount\_snow(0) {}**

**weather\_report(int day, double high, double low, double rain, double snow)**

**: day\_of\_month(day), high\_temp(high), low\_temp(low), amount\_rain(rain), amount\_snow(snow) {}**

**void set\_values() {**

**std::cout << "Enter day of the month: ";**

**std::cin >> day\_of\_month;**

**std::cout << "Enter high temperature: ";**

**std::cin >> high\_temp;**

**std::cout << "Enter low temperature: ";**

**std::cin >> low\_temp;**

**std::cout << "Enter amount of rain: ";**

**std::cin >> amount\_rain;**

**std::cout << "Enter amount of snow: ";**

**std::cin >> amount\_snow;**

**}**

**void calculate\_average(int num\_days) {**

**double avg\_high = high\_temp / num\_days;**

**double avg\_low = low\_temp / num\_days;**

**double avg\_rain = amount\_rain / num\_days;**

**double avg\_snow = amount\_snow / num\_days;**

**std::cout << "Monthly report:" << std::endl;**

**std::cout << "Average High Temperature: " << avg\_high << std::endl;**

**std::cout << "Average Low Temperature: " << avg\_low << std::endl;**

**std::cout << "Average Amount of Rain: " << avg\_rain << std::endl;**

**std::cout << "Average Amount of Snow: " << avg\_snow << std::endl;**

**}**

**};**

**int main() {**

**int num\_days;**

**std::cout << "Enter the number of days in the month: ";**

**std::cin >> num\_days;**

**std::vector<weather\_report> monthly\_report(num\_days);**

**int choice;**

**do {**

**std::cout << "\n1. Enter weather data for each day\n";**

**std::cout << "2. Generate monthly report\n";**

**std::cout << "3. Exit\n";**

**std::cout << "Enter your choice: ";**

**std::cin >> choice;**

**switch(choice) {**

**case 1: {**

**for (int i = 0; i < num\_days; ++i) {**

**std::cout << "Day " << i + 1 << ":" << std::endl;**

**monthly\_report[i].set\_values();**

**}**

**break;**

**}**

**case 2: {**

**double total\_high = 0, total\_low = 0, total\_rain = 0, total\_snow = 0;**

**for (const auto& report : monthly\_report) {**

**total\_high += report.high\_temp;**

**total\_low += report.low\_temp;**

**total\_rain += report.amount\_rain;**

**total\_snow += report.amount\_snow;**

**}**

**weather\_report monthly\_total(0, total\_high, total\_low, total\_rain, total\_snow);**

**monthly\_total.calculate\_average(num\_days);**

**break;**

**}**

**case 3: {**

**std::cout << "Exiting...\n";**

**break;**

**}**

**default: {**

**std::cout << "Invalid choice. Please enter again.\n";**

**}**

**}**

**} while (choice != 3);**

**return 0;**

**}**

**OUTPUT :**

**Enter the number of days in the month: 3**

**1. Enter weather data for each day**

**2. Generate monthly report**

**3. Exit**

**Enter your choice: 1**

**Day 1:**

**Enter day of the month: 1**

**Enter high temperature: 75.5**

**Enter low temperature: 55.0**

**Enter amount of rain: 0.1**

**Enter amount of snow: 0.0**

**Day 2:**

**Enter day of the month: 2**

**Enter high temperature: 80.0**

**Enter low temperature: 60.0**

**Enter amount of rain: 0.0**

**Enter amount of snow: 0.0**

**Day 3:**

**Enter day of the month: 3**

**Enter high temperature: 78.0**

**Enter low temperature: 58.0**

**Enter amount of rain: 0.2**

**Enter amount of snow: 0.0**

**1. Enter weather data for each day**

**2. Generate monthly report**

**3. Exit**

**Enter your choice: 2**

**Monthly report:**

**Average High Temperature: 77.8333**

**Average Low Temperature: 57.6667**

**Average Amount of Rain: 0.1**

**Average Amount of Snow: 0**