

VU LEARNING HUB

CS201P Assignment 1 Solution

Fall 2026

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```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
    // NOTE: Replace these two lines with your own full name and VU Student ID
    // before submitting. The values below are the assignment's own example.
    string studentName = "Your Name";
    string studentID = "BS123456789";
    long long numericID = 123456789;

    cout << "Student Name: " << studentName << endl;
    cout << "Student ID: " << studentID << endl;
    cout << "----------------------------------------" << endl;
    cout << "Community Water Refill Depot - Daily Billing" << endl;
    cout << "----------------------------------------" << endl;

    // Extract the last five digits of the numeric ID using / and %
    int digits[5];
    digits[0] = (numericID / 10000) % 10;
    digits[1] = (numericID / 1000) % 10;
    digits[2] = (numericID / 100) % 10;
    digits[3] = (numericID / 10) % 10;
    digits[4] = numericID % 10;

    int totalContainers = 0;
    int totalOriginal = 0;
    int totalDiscount = 0;
    int finalAmount = 0;

    for (int i = 0; i < 5; i++) {
        int quantity = digits[i] * 10;
        int rate;
        string packageType;
        if (i < 3) {
            rate = 70;
            packageType = "5-litre container";
        } else {
            rate = 180;
            packageType = "19-litre container";
        }
        int originalCharge = quantity * rate;
        int discount = 0;
        if (quantity >= 50) {
            discount = originalCharge * 10 / 100;
        }
        int finalCharge = originalCharge - discount;

        cout << endl;
        cout << "Order " << (i + 1) << ":" << endl;
```

```
        cout << "Quantity: " << quantity << " containers" << endl;
        cout << "Package Type: " << packageType << endl;
        cout << "Original Charge: Rs. " << originalCharge << endl;
        cout << "Discount Amount: Rs. " << discount << endl;
        cout << "Final Charge: Rs. " << finalCharge << endl;

        totalContainers += quantity;
        totalOriginal += originalCharge;
        totalDiscount += discount;
        finalAmount += finalCharge;
    }

    string status;
    if (finalAmount < 15000) {
        status = "LOW SALES";
    } else if (finalAmount < 30000) {
        status = "NORMAL SALES";
    } else {
        status = "HIGH SALES";
    }

    cout << endl;
    cout << "---------------------------------------" << endl;
    cout << "Daily Summary:" << endl;
    cout << "Total Containers Supplied: " << totalContainers << endl;
    cout << "Total Original Charges: Rs. " << totalOriginal << endl;
    cout << "Total Discount: Rs. " << totalDiscount << endl;
    cout << "Final Amount Collected: Rs. " << finalAmount << endl;
    cout << "Sales Status: " << status << endl;

    return 0;
}
```

Student Name: Your Name
Student ID: BS123456789

Community Water Refill Depot - Daily Billing

Order 1:
Quantity: 50 containers
Package Type: 5-litre container
Original Charge: Rs. 3500
Discount Amount: Rs. 350
Final Charge: Rs. 3150

Order 2:
Quantity: 60 containers
Package Type: 5-litre container
Original Charge: Rs. 4200
Discount Amount: Rs. 420
Final Charge: Rs. 3780

Order 3:
Quantity: 70 containers
Package Type: 5-litre container
Original Charge: Rs. 4900
Discount Amount: Rs. 490
Final Charge: Rs. 4410

Order 4:
Quantity: 80 containers
Package Type: 19-litre container
Original Charge: Rs. 14400
Discount Amount: Rs. 1440
Final Charge: Rs. 12960

Order 5:
Quantity: 90 containers
Package Type: 19-litre container
Original Charge: Rs. 16200
Discount Amount: Rs. 1620
Final Charge: Rs. 14580

Daily Summary:
Total Containers Supplied: 350
Total Original Charges: Rs. 43200
Total Discount: Rs. 4320
Final Amount Collected: Rs. 38880
Sales Status: HIGH SALES