**WEEK 7**

**CODE:**

#include <iostream>

#include <string>

#include <iomanip>

#include <vector>

#include <algorithm>

struct Charity {

std::string name;

double total;

};

void displayCharities(const std::vector<Charity>& charities) {

std::cout << std::setw(25) << "Charity Number" << std::setw(25) << "Charity Name\n";

for (size\_t i = 0; i < charities.size(); ++i) {

std::cout << std::setw(25) << i + 1 << std::setw(25) << charities[i].name << "\n";

}

}

void displayTotals(const std::vector<Charity>& charities) {

std::cout << "\nCharity Totals (Descending Order):\n";

std::cout << std::setw(25) << "Charity Name" << std::setw(25) << "Total Donated\n";

std::vector<Charity> sortedCharities = charities;

std::sort(sortedCharities.begin(), sortedCharities.end(),

[](const Charity& a, const Charity& b) { return a.total > b.total; });

for (const auto& charity : sortedCharities) {

std::cout << std::setw(25) << charity.name << std::setw(25) << "$" << charity.total << "\n";

}

}

int main() {

std::vector<Charity> charities = {{"Charity 1", 0.0}, {"Charity 2", 0.0}, {"Charity 3", 0.0}};

double shoppingBill, donation;

int choice;

double grandTotal = 0.0;

std::cout << "Welcome to the Charity Donation System!\n\n";

for (auto& charity : charities) {

std::cout << "Enter the name of " << charity.name << ": ";

std::getline(std::cin, charity.name);

}

while (true) {

std::cout << "\n";

displayCharities(charities);

std::cout << "\nEnter your choice (1, 2, 3) or -1 to show totals: ";

std::cin >> choice;

if (choice == -1) {

std::cout << "\n";

displayTotals(charities);

grandTotal = charities[0].total + charities[1].total + charities[2].total;

double donationFromTotal = 0.01 \* grandTotal;

std::cout << "\nGRAND TOTAL DONATED TO CHARITIES: $" << grandTotal << "\n";

std::cout << "Your donation also contributes to the grand total. From the total amount, $"

<< donationFromTotal << " will be donated to all charities collectively.\n";

break;

}

if (choice < 1 || choice > 3) {

std::cout << "Invalid choice. Please choose 1, 2, 3, or -1 to show totals.\n";

continue;

}

std::cout << "Enter your shopping bill amount: $";

std::cin >> shoppingBill;

donation = 0.01 \* shoppingBill;

charities[choice - 1].total += donation;

std::cout << "\nThank you for your donation of $" << donation << " to " << charities[choice - 1].name << ".\n";

}

return 0;

}

**OUTPUT:**



