// Program 2 - Due 6\_24\_2023

// By KariAnn Harjo

#include <iostream>

#include <iomanip>

#include <string>

#include <algorithm>

using namespace std;

const int SIZE = 10;

// Structure MonthBudget

struct MonthBudget {

double housing;

double utilities;

double household\_expenses;

double transportation;

double food;

double medical;

double insurance;

double entertainment;

double clothing;

double misc;

};

// C-string array to store the category names

const char\* categoryNames[] = {

"Housing",

"Utilities",

"Household Expenses",

"Transportation",

"Food",

"Medical",

"Insurance",

"Entertainment",

"Clothing",

"Miscellaneous"

};

// Constant array values for budget

const double budget[] = {

500.00,

150.00,

60.00,

70.00,

200.00,

40.00,

100.00,

120.00,

50.00,

40.00

};

// Function prototypes

void getData(MonthBudget\* monthBudget);

void report(const MonthBudget\* monthBudget);

int main() {

// Create a MonthBudget variable

MonthBudget budget;

// Call the functions

getData(&budget);

report(&budget);

return 0;

}

// Function that takes a MonthBudget structure pointer variable

// as an input argument and then prints the budget report

void report(const MonthBudget\* monthBudget) {

double total\_spent = 0;

double total\_budget = 0;

for (int index = 0; index < SIZE; index++)

total\_budget += budget[index];

cout << left << setw(20) << "Category"

<< setw(20) << "Budgeted"

<< setw(20) << "Spent"

<< setw(20) << "Over(-)/Under" << endl;

cout << "-------------------------------------------------------------" << endl;

for (int index = 0; index < SIZE; index++) {

double difference = budget[index] - \*(&monthBudget->housing + index);

total\_spent += \*(&monthBudget->housing + index);

cout << fixed << setprecision(2) << left << setw(20) << categoryNames[index]

<< setw(20) << budget[index]

<< setw(20) << \*(&monthBudget->housing + index)

<< setw(20) << difference << endl;

}

double overall\_difference = total\_spent - total\_budget;

if (overall\_difference < 0)

cout << "For the month, you are under budget by $" << -overall\_difference << endl;

else if (overall\_difference > 0)

cout << "For the month, you are above budget by $" << overall\_difference << endl;

else

cout << "For the month, you are exactly on budget" << endl;

}

// Function that takes a structure pointer variable and prompts the user to enter the values from the keyboard

void getData(MonthBudget\* monthBudget) {

cout << "Enter the amount spent on " << categoryNames[0] << ": ";

cin >> monthBudget->housing;

cout << "Enter the amount spent on " << categoryNames[1] << ": ";

cin >> monthBudget->utilities;

cout << "Enter the amount spent on " << categoryNames[2] << ": ";

cin >> monthBudget->household\_expenses;

cout << "Enter the amount spent on " << categoryNames[3] << ": ";

cin >> monthBudget->transportation;

cout << "Enter the amount spent on " << categoryNames[4] << ": ";

cin >> monthBudget->food;

cout << "Enter the amount spent on " << categoryNames[5] << ": ";

cin >> monthBudget->medical;

cout << "Enter the amount spent on " << categoryNames[6] << ": ";

cin >> monthBudget->insurance;

cout << "Enter the amount spent on " << categoryNames[7] << ": ";

cin >> monthBudget->entertainment;

cout << "Enter the amount spent on " << categoryNames[8] << ": ";

cin >> monthBudget->clothing;

cout << "Enter the amount spent on " << categoryNames[9] << ": ";

cin >> monthBudget->misc;

}

A screenshot of a computer

Description automatically generated