**Austin Tesch**

**Chapter Three**

**Date: 04-18-24**

**First program: ch3\_pgm1; Calculate and present total monthly and annual costs incurred for expenses.**

**Code:**

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Programmer: Austin Tesch

Date modified: 04-25-54

Compiler used:  XCODE v. 15.0

Purpose: Prompt users to input monthly expenditures for various housing-related essentials. Calculate and present both the total monthly and annual costs incurred for these expenses.

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#include <iostream>

using namespace std;

int main()

{

// Prompt user for various monthly expenditures.

// Rent or mortgage, phone, internet, cable.

float mortgage, phone, internet, cable;

cout << "Please input monthly cost for expenditures in the following order \n"

<< "Mortgage or Rent \n" << "Phone Payments\n" << "Internet\n" << "Cable" << endl;

cin >> mortgage >> phone >> internet >> cable;

// Compute the monthly total cost incurred.

float total\_monthly = mortgage + phone + internet + cable;

// Compute the yearly total cost incurred.

int months\_per\_year = 12;

float total\_annually = total\_monthly \* months\_per\_year;

// Output total cost incurred both monthly and yearly to user.

cout << "Total monthly cost incurred: $" << total\_monthly << endl;

cout << "Total annual cost incurred: $" << total\_annually << endl;

return 0;

}

**Output:**

**A screenshot of a computer

Description automatically generated**

**Second Program: ch3\_pgm2; Collect test scores and display the average.**

**Code:**

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Programmer: Austin Tesch

Date modified: 04-25-24

Compiler used:  XCODE v. 15.0

Purpose: Collect five test scores from the user. Upon input, the program will compute and display the average test score.

\*/

#include <iostream>

#include <iomanip>

using namespace std;

int main()

{

// Collect test scores from user.

float score1, score2, score3, score4, score5;

cout << "Please input 5 test scores." << endl;

cin >> score1 >> score2 >> score3 >> score4 >> score5;

// Compute avrage test score.

float total = score1 + score2 + score3 + score4 + score5,

avg = total / 5;

// Output avrage test score to user.

cout << "The avrage test score is: " << fixed << setprecision(1) << avg << endl;

return 0;

}

**Output:**

**A screenshot of a computer

Description automatically generated**

**Third Program: ch3\_pgm3; Ask user how many crackers they have eaten and display the total calories.**

**Code:**

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Programmer: Austin Tesch

Date modified: 04-25-24

Compiler used:  XCODE v. 15.0

Purpose: A program asking the user to input how many crackers they ate and then report how many total calories were consumed.

A box of crackers contains 40 crackers.

The calorie information on the box claims that there are 10 “servings” in the box

A serving equals 120 calories.

\*/

#include <iostream>

using namespace std;

int main()

{

// Ask user how may crackers that have eaten.

float total\_crackers\_consumed;

cout << "Welcome to crackers to calories converter!\n"

<< "How many crackers did you eat?" << endl;

cin >> total\_crackers\_consumed;

// Compute the total calories consumed.

int single\_serving = 4,

calories\_per\_serving = 120;

float calories\_consumed = (total\_crackers\_consumed / single\_serving) \* calories\_per\_serving;

// Output total calories consumed to user.

cout << "Total calories consumed in crackers is: " << calories\_consumed << endl;

return 0;

}

**Output:**

**A screenshot of a chat

Description automatically generated**

**Fourth Program: ch3\_pgm4; Calculate the total number of whole slices a pizza can be divided into.**

**Code:**

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Programmer: Austin Tesch

Date modified: 04-25-24

Compiler used:  XCODE v. 15.0

Purpose: A program to calculate the number of slices a pizza of any size can be divided into.

Ask the user for the diameter of the pizza in inches.

Divide the diameter by 2 to get the radius.

Calculate the number of slices that may be taken from a pizza of that size if each slice has an area of 12.789 square inches.

Display a message telling the number of slices.

\*/

#include <iostream>

#include <cmath>

using namespace std;

int main()

{

const float PI = 3.14, SLICE = 12.789;

// Ask user for the diameter of the pizza in inches.

float pizza\_diameter;

cout << "What is the diameter of your pizza (in inches)?" << endl;

cin >> pizza\_diameter;

// Calculate the number of slices that may be taken.

// Each slice has an area of 12.789 inches.

float

pizza\_radius = pizza\_diameter / 2,

pizza\_area = PI \* pow(pizza\_radius, 2);

int total\_slices = pizza\_area / SLICE;

// Output a message telling the user the number of slices.

cout << "You can cut your pizza into " << total\_slices << " whole slices." << endl;

return 0;

}

**Output:**

**A screenshot of a chat

Description automatically generated**