// 10/28/17

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// CISP 360 M/W 1:30-2:50 pm

//Spring 2017

//Assignment #9

//This program passes values to a function named futureValue and display's the account future value

#include <iostream>

#include <cmath>

#include <iomanip>

using namespace std;

float futureValue(float, float, int);

int main()

{

float presentValue;

float monthlyinterestRate;

int numMonths;

char answer;

float totalFutureValue;

cout << "What is the present value of the account? ";

cin >> presentValue;

while (presentValue<0) // input validation

{

cout << "\nInvalid input. Enter the account's present value: ";

cin >> presentValue;

}

cout << "What is the monthly interest rate? ";

cin >> monthlyinterestRate;

while (monthlyinterestRate <0) // input validation

{

cout << "\nInvalid inpit. Enter the account's monthly interest rate :";

cin >> monthlyinterestRate;

}

cout << "For how many months will the money will be left in the account? ";

cin >> numMonths;

while (numMonths<0)

{

cout <<"\nInvalid input. Enter the number of months that the money will be left in the account: ";

cin >> numMonths;

}

totalFutureValue= futureValue(presentValue, monthlyinterestRate, numMonths);

cout << "The account's future value will be $" << setprecision(2) << fixed << totalFutureValue << endl;

cout << "Want to try another set of values? (y = yes) : ";

cin >> answer;

// prompt to try another set of values

while (answer=='y' || answer =='y')

{

cout << "\nWhat is the present value of the account? ";

cin >> presentValue;

while (presentValue<0) // input validation

{

cout << "\nInvalid input. Enter the account's present value: ";

cin >> presentValue;

}

cout << "What is the monthly interest rate? ";

cin >> monthlyinterestRate;

while (monthlyinterestRate <0) // input validation

{

cout << "\nInvalid inpit. Enter the account's monthly interest rate :";

cin >> monthlyinterestRate;

}

cout << "For how many months will the money will be left in the account? ";

cin >> numMonths;

while (numMonths<0)

{

cout <<"\nInvalid input. Enter the number of months that the money will be left in the account: ";

cin >> numMonths;

}

totalFutureValue= futureValue(presentValue, monthlyinterestRate, numMonths);

cout << "The account's future value will be $" << setprecision(2) << fixed << totalFutureValue << endl;

cout << "Want to try another set of values? (y = yes) : ";

cin >> answer;

}

system("pause");

return 0;

}

float futureValue(float P, float i, int t)

{

float fValue=0; // future value of account

fValue= P\*pow(1+i,t); // future value formula

return fValue;

}

