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/*-----
 * Christopher Fields
 * 90.267 C Programming
 * Programming Assignment #1
 * 2/24/2014
 * Part 2 of 2: Forloop
 *-----*/

/*-----
 * Test Cases:
 * 1. 10 gallons, $.39 per Liter
 * 2. 5 gallons, $.50 per Liter
 *-----*/

/*
This program prompts for two inputs:
    1) Amount of fuel purchased in gallons
    2) Cost of fuel in dollars per liter
Using this information the program generates a bill of sale,
consisting of volume of fuel used in gallons, liters, and cost.
This version of the program iterates using a for loop.
*/

// Declaring libraries
#include <stdio.h>

// Adds ability to format printf by region
#include <locale.h>

int main(void)
{
    // Set locality to English/United States, UTF-8
    setlocale(LC_NUMERIC, "en_US.UTF-8");

    // Declare Variables
    int gallon_input, count;
    float calc_liters, costperLiter_input, calc_cost;

    // Define Constant
    float const liters_per_gallon = 3.785;

    // Gather & test input
    do {
        printf ("Gallons of fuel purchased -> ");
        scanf ("%i", &gallon_input);

        // Provide error feedback if gallon_input is out of range
        if ( gallon_input <= 0 || gallon_input > 100 )
            printf ("Error: Input should be an integer between 1 and 100 \n");
    }
    // Exit do loop if gallon_input is in range
    while ( gallon_input <= 0 || gallon_input > 100 );
}
```

```
// Gather untested user input
printf ("Cost per liter -> ");
scanf ("%f", &costperLiter_input);

// Print header of invoice
printf ("\n\t Gasoline Charges\n\n");
printf ("Gallons\t\tLiters\t\tCost\n");
printf ("-----\n");

// For Loop iterates, calculating and printing data
// until the loop's incremental value exceeds gallon_input
for (count = 1; count <= gallon_input; count++) {

    // Calculate liters & cost per iteration of loop
    calc_liters = liters_per_gallon * count;
    calc_cost = costperLiter_input * calc_liters;

    // Print row of data for iteration of loop
    // ' ' in $%'3.2f formats a comma every 3 significant numbers
    printf ("\t%2d\t\t%2.3f\t\t$%'3.2f\n", count, calc_liters, calc_cost);
}

printf ("-----\n");

return 0;
}
```