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

/*--------------------------------
 *  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 while 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 = 1;
    float calc_liters, costperLiter_input, calc_cost;


    //  Define Constant
    float const liters_per_gallon = 3.785;


    //  Gather tested user 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 from 1 to 100 \n");
    }
    //  Ends loop on false;
    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");

    //  Loop iterates, printing data until count exceeds gallon_input
    while ( count <= gallon_input ) {

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

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

        //  Increment by one
        count++;
    }

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

    return 0;
}
```

Gallons of fuel purchased –> 10
Cost per liter –> .39

Gasoline Charges

Gallons	Liters	Cost
1	3.785	$1.48
2	7.570	$2.95
3	11.355	$4.43
4	15.140	$5.90
5	18.925	$7.38
6	22.710	$8.86
7	26.495	$10.33
8	30.280	$11.81
9	34.065	$13.29
10	37.850	$14.76

Program ended with exit code: 0

Gallons of fuel purchased –> 5
Cost per liter –> .50

Gasoline Charges

Gallons	Liters	Cost
1	3.785	$1.89
2	7.570	$3.79
3	11.355	$5.68
4	15.140	$7.57
5	18.925	$9.46

Program ended with exit code: 0

```c
/*--------------------------------
 *  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 $%'3.2f formats a comma every 3 signifigant numbers
        printf ("\t%2d\t\t%2.3f\t\t$%'3.2f\n", count, calc_liters, calc_cost);
    }

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

    return 0;
}
```