**Project 1**

**Introduction to the Lab Environment**

**EE 371 AC**

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**Design Requirements:**

# Abstract

In this part of the lab, we were introduced to the CodeBlocks learning environment for developing C code. We created a C program that functions as a currency exchange calculator.

# Introduction

A currency conversion calculator is an important tool to have at hand with the increasing global economy coupled with lower airfare. To approach this problem, we created a C program with a simple user interface that allows to convert currency from US dollars to the desired foreign currency. In addition to that, it also lets the user know the price of a good old bottle of corona in the foreign currency.

# Inputs to Calculator

The inputs to the calculator command line are as follows:

1. Amount in US Dollars/ Foreign Currency
2. The current exchange rate for the foreign currency
3. Number (1) if currency is converted from US Dollars to Foreign Currency
4. Number (2) if currency is converted from Foreign Currency to US Dollars

# Outputs from Calculator

The outputs produced by the calculator are as follows:

1. Amount of corresponding Foreign Currency/or US Dollars (depending on the option the user chose)
2. The cost of a bottle of corona beer in foreign currency.

# Major Functions

This program contains four major functions:

1. int main (int argc, char\*\* argv) : Consists of lines of code to execute methods and initial argument interpretation.
2. void convertUStoForeign (float amt, float exhange) : converts and prints value from US Dollars to user specified foreign currency.
3. void convertForeigntoUS (float amt, float exhange) : converts and prints value from Foreign Currency to US Dollars.
4. void priceOfBeer(float exhange) : prints the value of a bottle of corona in foreign currency.

**Design Specifications**

# Abstract

Our task comprised of using the Command-Line Tool Interface to send arguments to a C program file as well as compile and run the C program for calculating foreign currency and US dollars conversion rates.

# Introduction

A currency conversion calculator is an important tool to have at hand with the increasing global economy coupled with lower airfare. To approach this problem, we created a C program with a simple user interface that allows to convert currency from US dollars to the desired foreign currency. In addition to that, it also lets the user know the price of a good old bottle of corona in the foreign currency.

# Inputs to Calculator

The inputs to the calculator consisted of arguments passed through the program using the command line interface. The first argument passed as input was the amount of money (foreign or US dollars) that needed to be converted, which was represented as a float in C. The second value that was passed in is the float value for the exchange rate as appropriate for the conversion. The last value that is passed in is an integer (1 or 2 only) that determines whether conversion should be from US to Foreign Currency or vice versa.

# Outputs from Calculator

The C program outputs to the stdout (command line terminal or IDE developing environment console). If the user chooses option 1, the calculator prints the value of the foreign currency after conversion from the US Dollars with the given exchange rate along with the price of beer in foreign currency. If the user chooses option 2, the calculator prints the value of US dollars after converting it from foreign currency. If the inputs to the program were invalid, the calculator prints an error message.

# Major Functions

This program contains four major functions:

1. Main Function: This is the first method that is executing in any C program. It accepts the command line arguments which are specified in the inputs sections above. It uses the functions on atof and atoi to convert the command line arguments that are passed in as strings to floats and ints. The main program uses these arguments to call different methods to produce the results user needs. If the 3rd argument is 1, the method convertUStoForeign is called, if 2 is passed convertForeignToUS is called instead. If neither one of these ints are passed, an error method is printed out.
2. convertUStoForeign: Converts the US Dollars into the Foreign Currency. It takes in a float for currency and a float for exchange rate passed in as parameters. It then multiplies the two values and prints out the result as the resulting foreign currency value. This method also calls the priceOfBeer function which prints out the value of a beer in foreign currency along with this on the terminal.
3. convertForeigntoUS: Converts the Foreign currency to US Dollars. It takes in a float for currency and a float for exchange rate passed in as parameters. It then divides the two values and prints out the result as the resulting US Dollars value.