	AUTHOR: ESCANDOR, MATIVO, OLMILLA, OUANO	**PROJECT TITLE:** CURRENCY CONVERTER	**DATE: DECEMBER 9, 2022**
		TEACHER: MS. FE VILLAMON	**GRADE/BLOCK: STEM 12 T2**

Computer Fundamentals & Programming Project using C Language

1 Introduction

Have you ever thought about how much money would you get if you ever converted your money to another currency? Have you ever wondered how it would feel to have another currency just by converting your own money? Then you might want to try out this program. An easy to use currency converter for users that would like to know how much money they would get if they would convert it to another currency.

1.1 Overview

On a daily basis, purchases are made using cash, whether it be in the form of bills or credit cards. We utilize it as currency, despite the fact that each country has its own native currency that is used there.

As a senior high school student who is developing as an adult teen, learning about different currencies in different nations is an essential aspect of growing up. There are some students that would travel abroad with family or friends and it is important to at least know how much money you would get when converting your country's currency to another country.

We have decided that our group will propose a currency converter that can convert pesos into dollars, won, yen, euro and pounds. Although we have added a limit to the amount for instance if a user converts 5700 pesos or more, the amount that the user will get will only be 85% in total.

1.2 Features

- Users can select to convert from 5 different currencies.
- Gives the user the ability to try another conversion.
- Gives the calculated 85% of the value of the converted value is more than 100 dollars or 5700 pesos.
- Can detect invalid inputs.

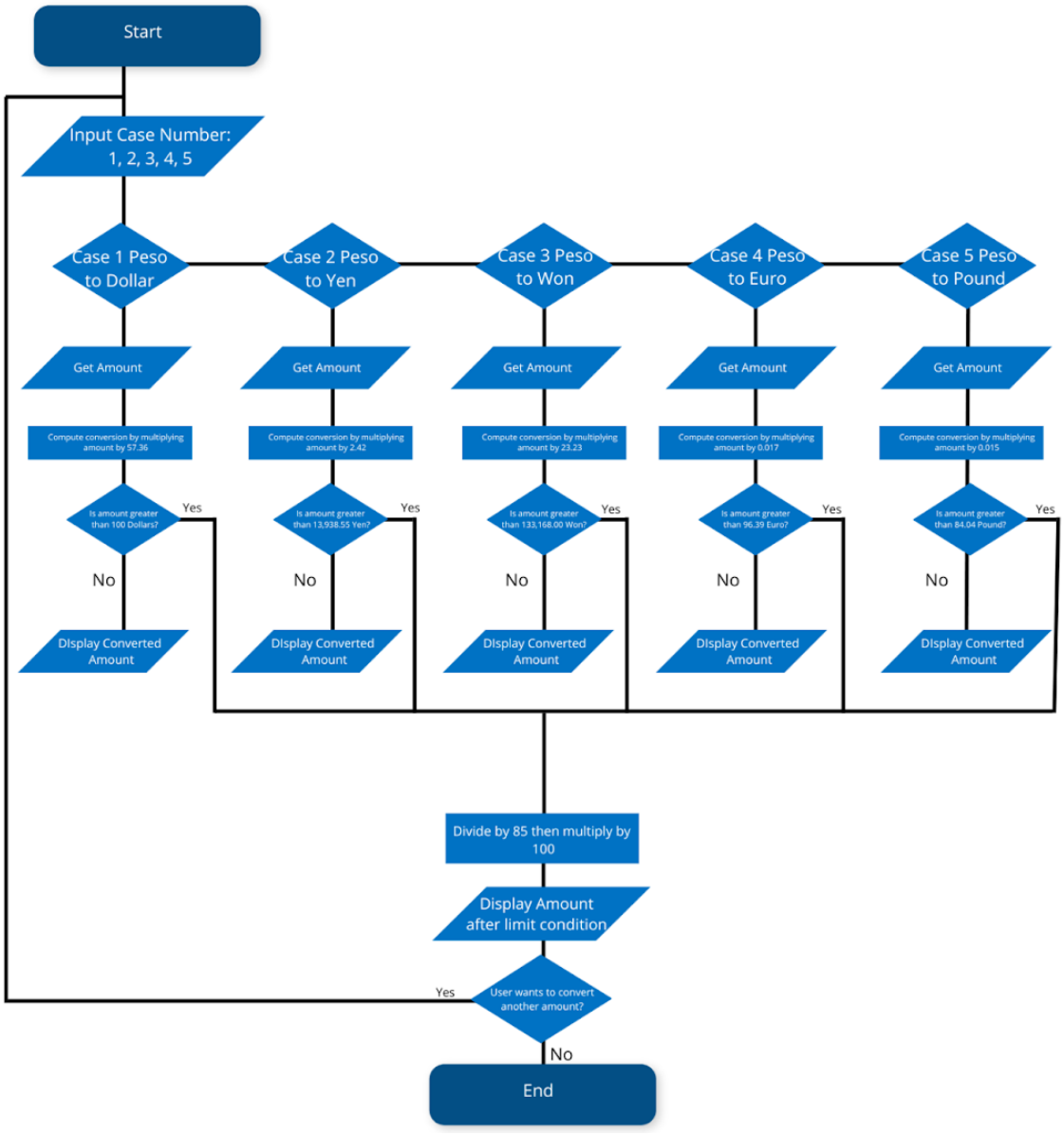
1.3 Scope and Limitations

This currency converter program is a C computer program that is designed to convert from one currency to another currency. This type of program is typically used by individuals or businesses that need to perform currency conversions on a daily basis.

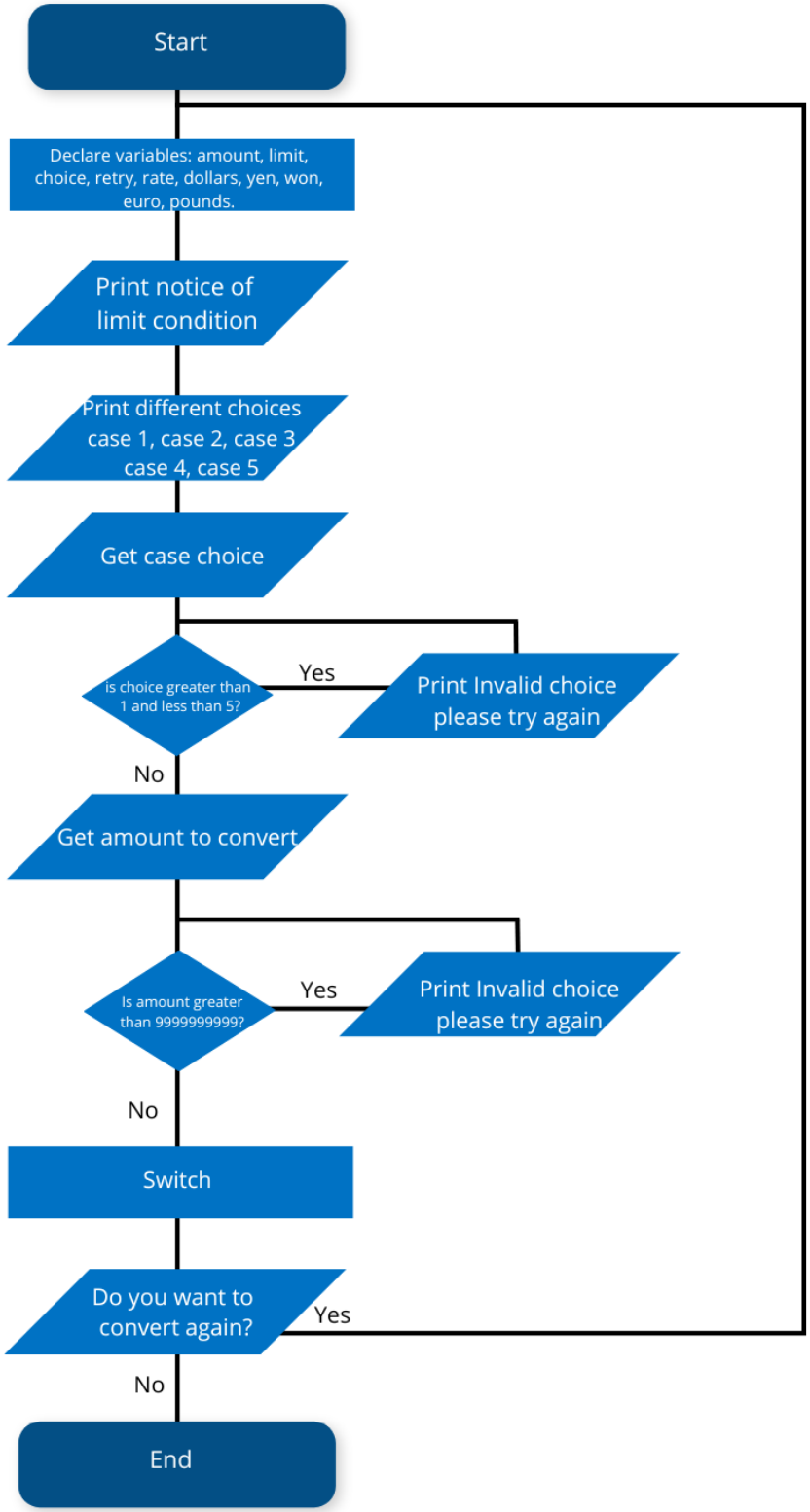
The scope of a currency converter program is limited to only converting one currency specifically (peso) into another. It does not have the ability to perform any other type of financial operations such as calculating interest rates or making investments. Additionally, this currency converter program is only as accurate as the exchange rates it uses, so it is important to ensure that the program is using real-time up-to-date exchange rates.

One limitation of this currency converter program is that it is only limited to exchanging the Philippine peso to only five available currencies mainly: Peso to Dollar, Peso to Yen, Peso to Won, Peso to Euro, and lastly Peso to Pound. Another limitation of this currency converter program is that it may not be able to handle large or complex currency conversion tasks. For example, any amount that has more than 15 digits will result in an error, the program will print that it is an invalid amount since the programming language C can only hold so much value in a single variable. In these cases, a more sophisticated financial tool or software program may be needed.

2 Programming Flowchart (High-Level)

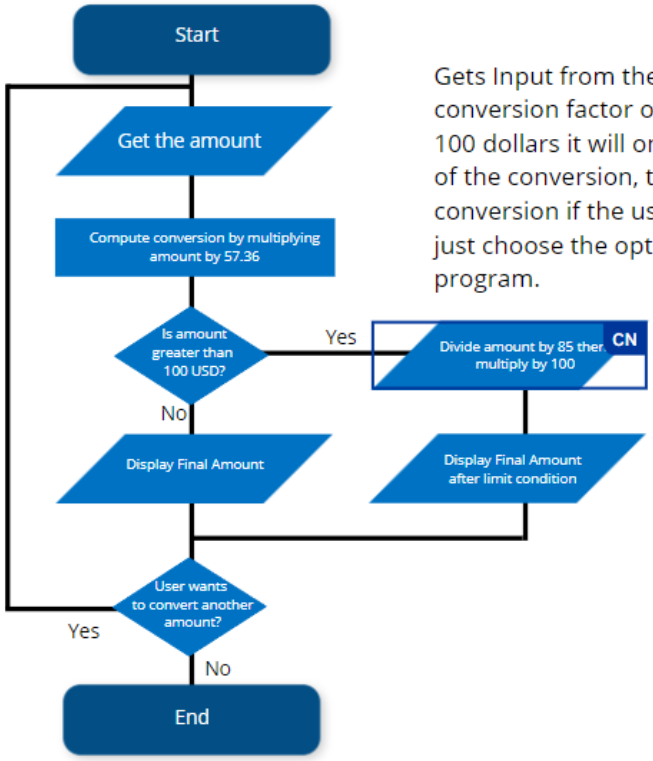


2.1 Main Flowchart



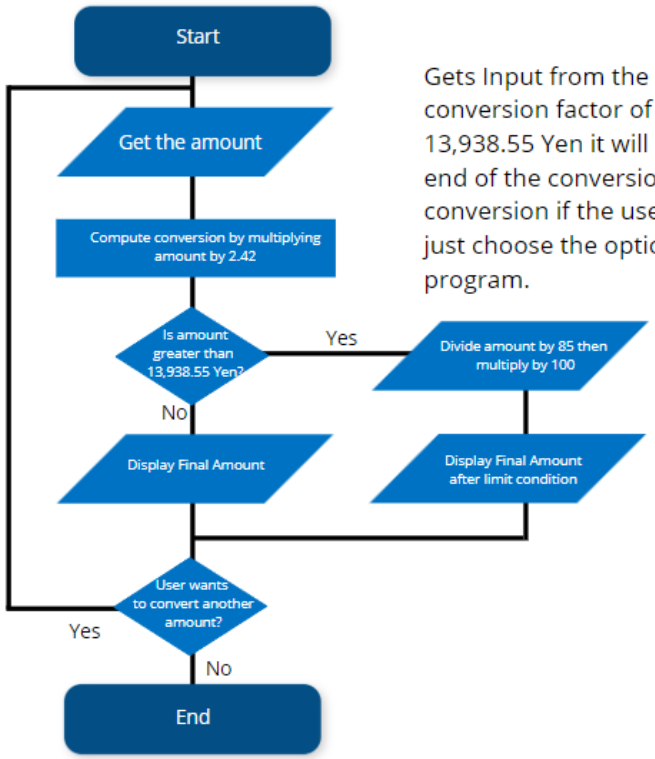
2.2 Functions

Module 1: Case 1 Conversion from Peso to Dollars



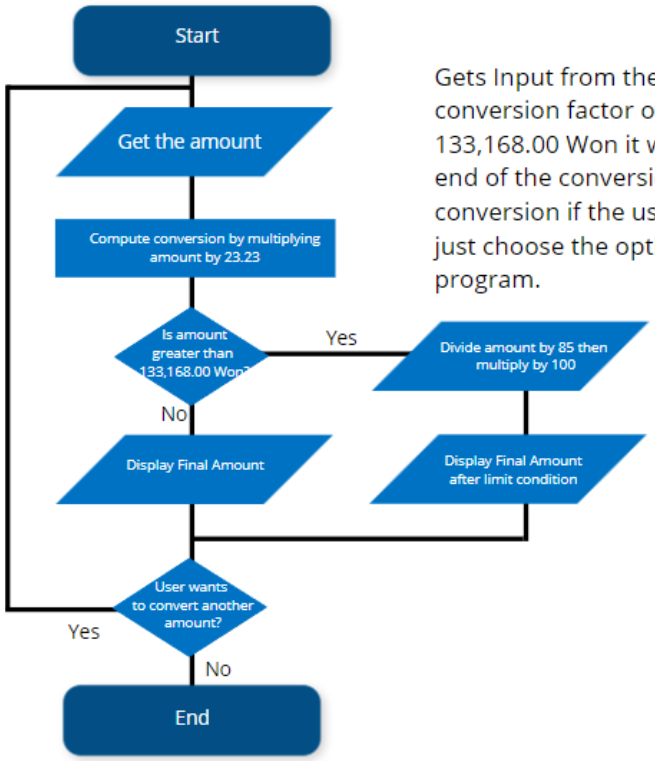
Gets Input from the user and calculates the final amount using a conversion factor of 57.36. If the amount is equal or greater than 100 dollars it will only return 85% of its calculated value. At the end of the conversion, the program prompts the user to retry the conversion if the user wants to convert again or if not, the user can just choose the option not to convert or retry and it terminates the program.

Module 2: Case 2 Conversion from Peso to Yen



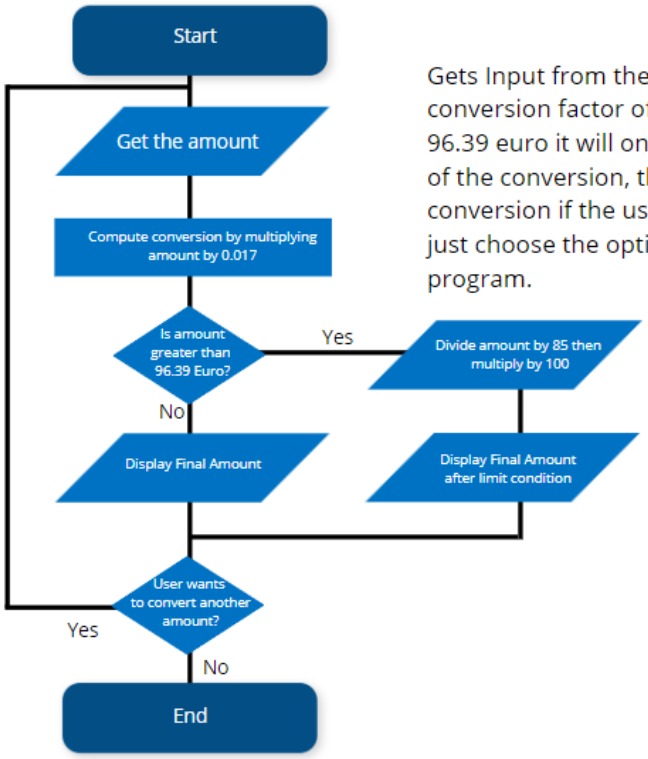
Gets Input from the user and calculates the final amount using a conversion factor of 2.42. If the amount is equal or greater than 13,938.55 Yen it will only return 85% of its calculated value. At the end of the conversion, the program prompts the user to retry the conversion if the user wants to convert again or if not, the user can just choose the option not to convert or retry and it terminates the program.

Module 3: Case 3 Conversion from Peso to Won



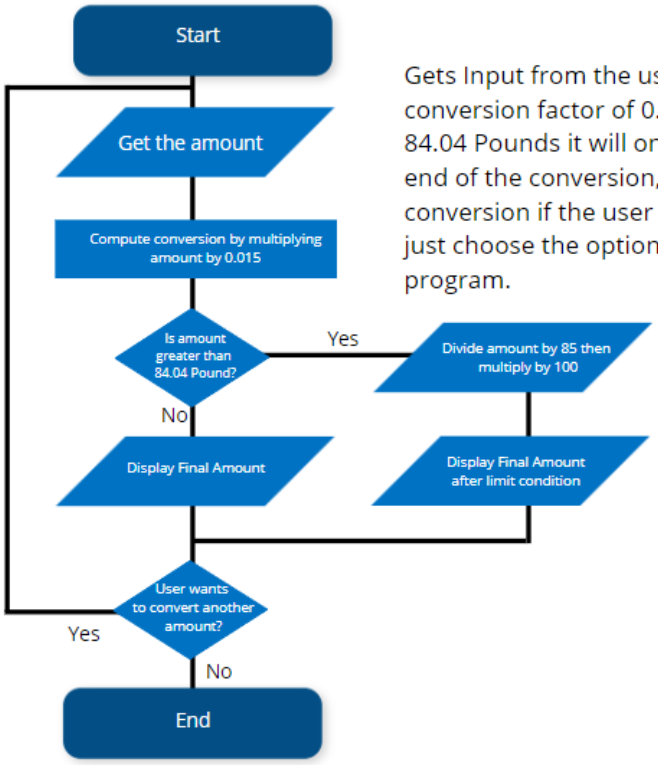
Gets Input from the user and calculates the final amount using a conversion factor of 23.23. If the amount is equal or greater than 133,168.00 Won it will only return 85% of its calculated value. At the end of the conversion, the program prompts the user to retry the conversion if the user wants to convert again or if not, the user can just choose the option not to convert or retry and it terminates the program.

Module 4: Case 4 Conversion from Peso to Euro



Gets Input from the user and calculates the final amount using a conversion factor of 0.017. If the amount is equal or greater than 96.39 euro it will only return 85% of its calculated value. At the end of the conversion, the program prompts the user to retry the conversion if the user wants to convert again or if not, the user can just choose the option not to convert or retry and it terminates the program.

Module 5: Case 5 Conversion from Peso to Pound



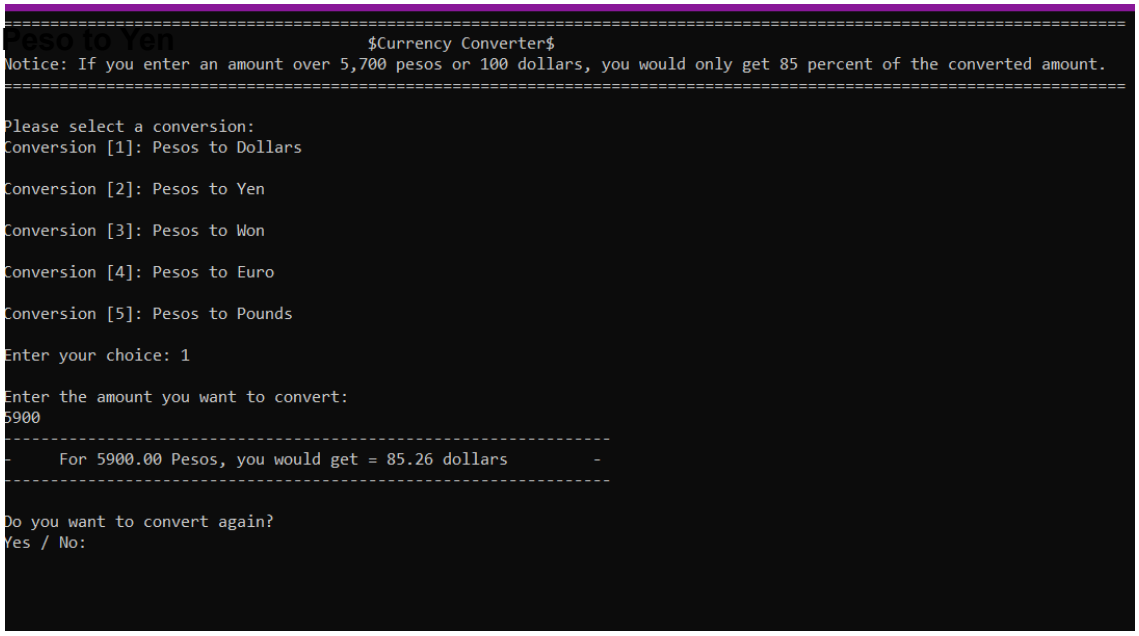
Gets Input from the user and calculates the final amount using a conversion factor of 0.015. If the amount is equal or greater than 84.04 Pounds it will only return 85% of its calculated value. At the end of the conversion, the program prompts the user to retry the conversion if the user wants to convert again or if not, the user can just choose the option not to convert or retry and it terminates the program.

3. Graphical User Interface (GUI)

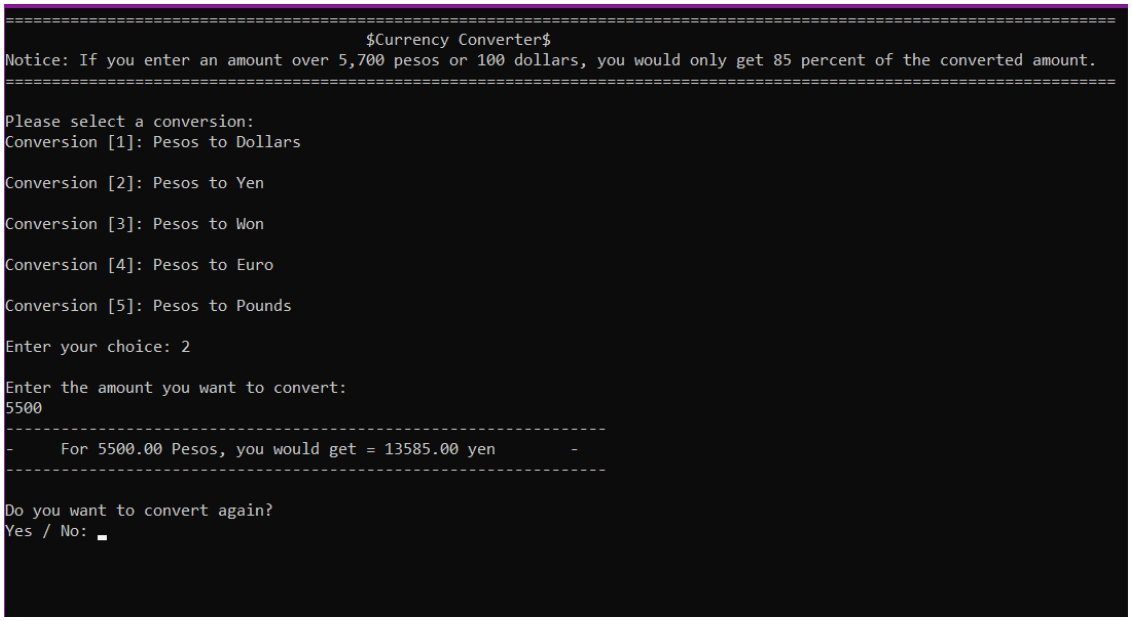
```
================================================================================================================================
                                        $Currency Converter$
Notice: If you enter an amount over 5,700 pesos or 100 dollars, you would only get 85 percent of the converted amount.
================================================================================================================================

Please select a conversion:
Conversion [1]: Pesos to Dollars

Conversion [2]: Pesos to Yen

Conversion [3]: Pesos to Won

Conversion [4]: Pesos to Euro

Conversion [5]: Pesos to Pounds

Enter your choice:
```

4. Sample output

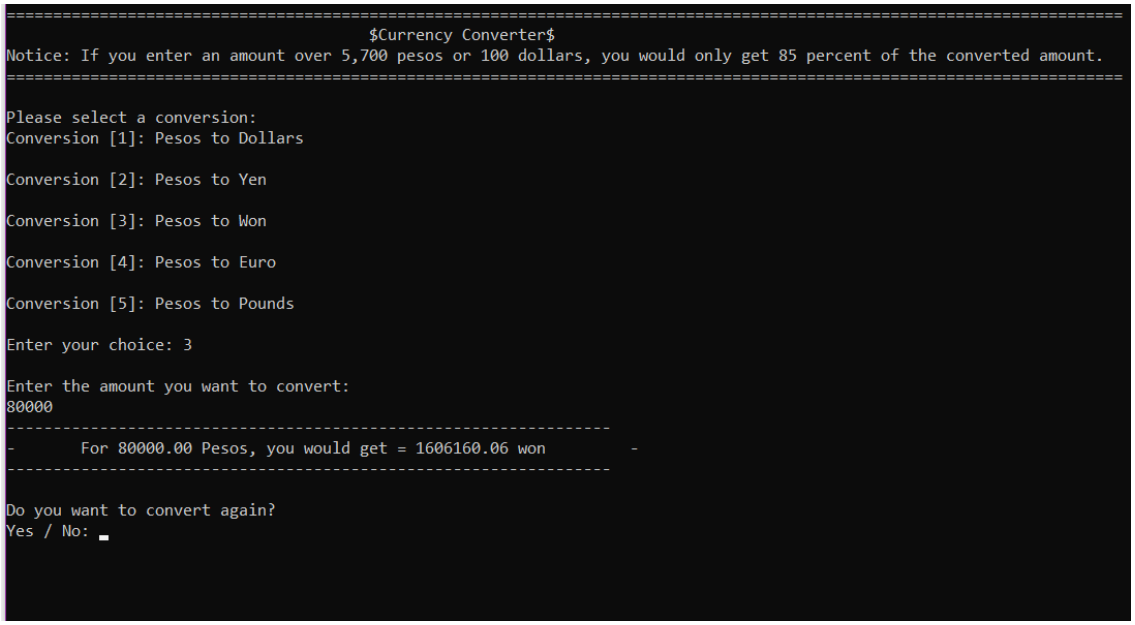
Peso to Dollars:



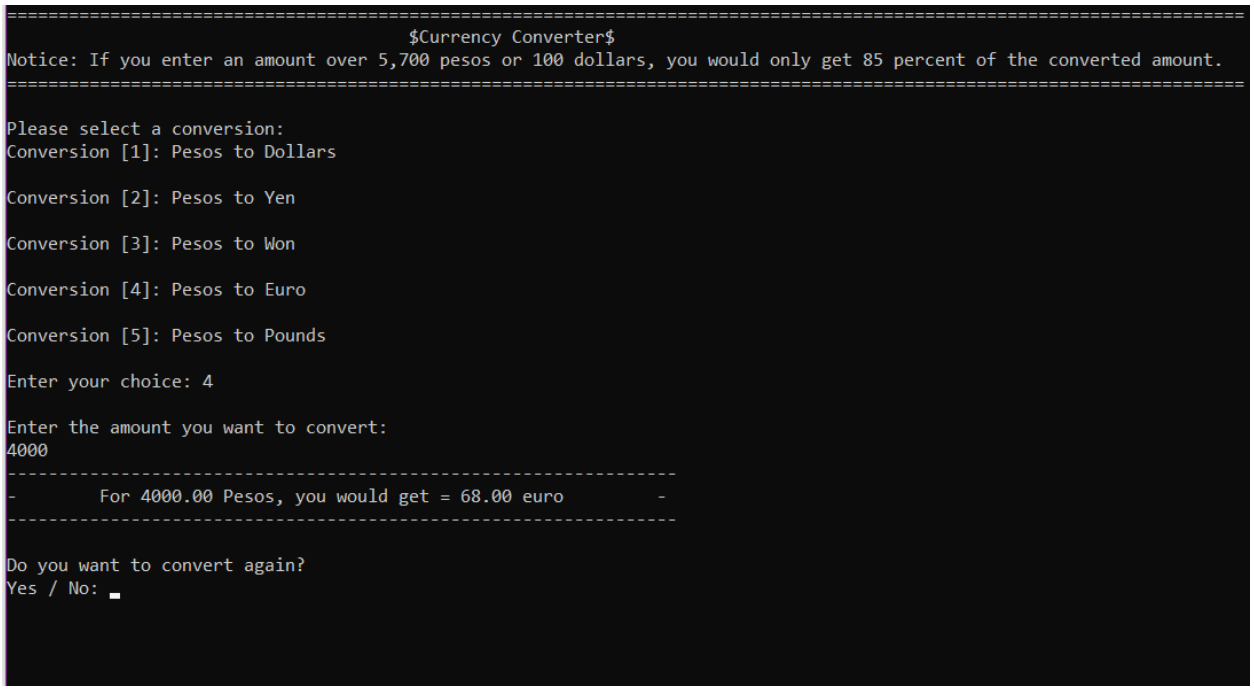
Peso to Yen:



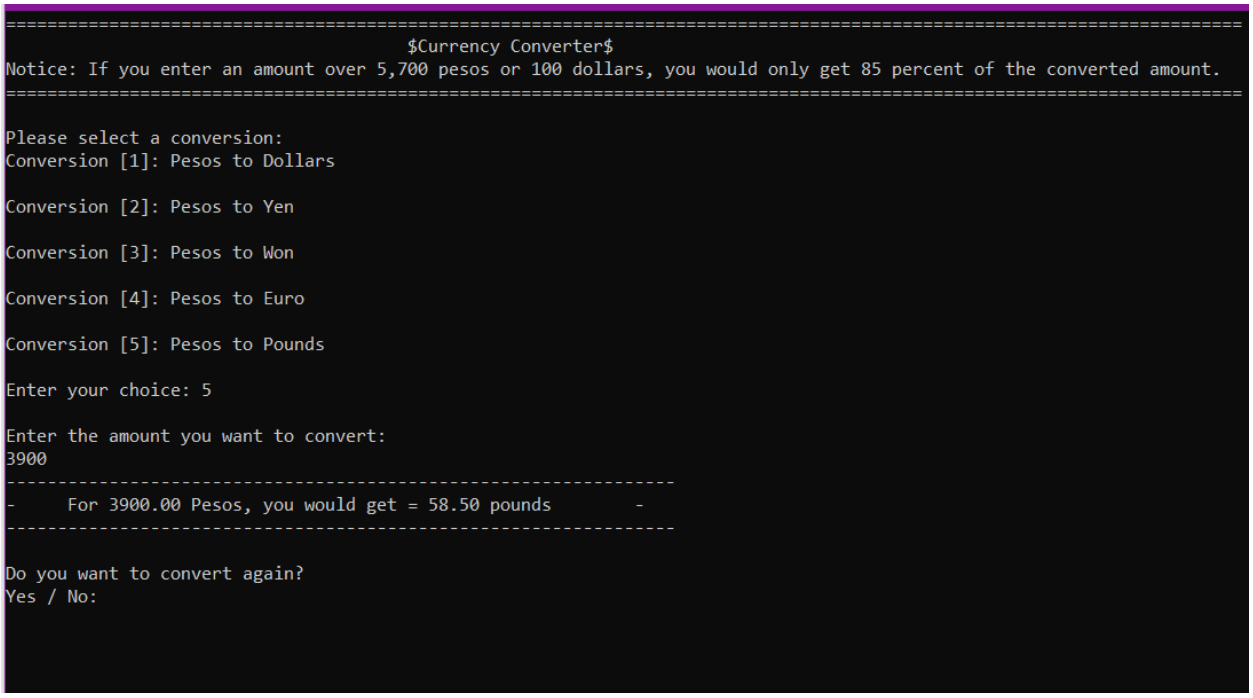
Peso to Won:



Peso to Euro:



Peso to Pounds:



5. Program Listing

```
/*
================================================================================
========================
FILE            :CurrencyConverter
AUTHOR          : Conrad Nestor B. Mativo, Dhan Jacob Olmilla, Railey Escandor,
Gabriel Jret Ouano
DESCRIPTION     : Program Computes Pesos to Dollar, Peso to Won, Peso to Euro,
Peso to Pounds
COPYRIGHT : November 29 2022
================================================================================
========================
*/
#include <stdio.h>
#include <string.h>

void ToDollars(double amount, float rate[]); // declaration of the subfunction
ToDollars
void ToYen(double amount, float rate[]); // declaration of the subfunction ToYen
```

```
void ToWon(double amount, float rate[]); // declaration of the subfunction ToWon
void ToEuro(double amount, float rate[]); // declaration of the subfunction ToEuro
void ToPounds(double amount, float rate[]); // declaration of the subfunction
ToPounds

int main(){

  double amount; // the user's money
  double dollars, yen, won, euro, pounds; // the currencies
  int limit; // only applies when you have an amount over 5,700 and above
  int choice; // the user selects what conversion is going to happen
  char retry[20]; // choices for the user to retry the program or not
  float rate[5] = {0.017, 2.47, 23.62, 0.017, 0.015}; // the conversion rates
  int val1 = 0;// this stores the identifier for the strcmp function (0 for true)
  int val2 = 0;//this stores the second identifier for the strcmp function (0 for true)


      do{ // do while loop, it will keep on reiterating as long as the condition in while is
true

printf("============================================================
============================================================");
          printf("                                $Currency Converter$");
                        printf("\nNotice: If you enter an amount over 5,700 pesos or 100
dollars, you would only get 85 percent of the converted amount.\n"); // gives a notice
that only 85 percent of the conversion will be given if the user has an amount over
5700 and above

printf("============================================================
============================================================");
          printf("\n\nPlease select a conversion: "); // instruction for the user
          printf("\nConversion [1]: Pesos to Dollars\n"); // converts pesos to yen
          printf("\nConversion [2]: Pesos to Yen\n"); // converts pesos to yen
          printf("\nConversion [3]: Pesos to Won\n"); // converts pesos to yen
          printf("\nConversion [4]: Pesos to Euro\n"); // converts pesos to yen
          printf("\nConversion [5]: Pesos to Pounds\n"); // converts pesos to yen

          printf("\nEnter your choice: "); // prompts the user to select a conversion
          scanf("%d", &choice); // gets the input from the user
                        getchar();    //this function is used just incase an alphabet is
inputted
```

```
            while(choice > 5 || choice < 1){
            printf("You have entered an invalid choice, please try again");
            printf("\nEnter your choice: "); // prompts the user to select a conversion
            scanf("%d", &choice); // gets the input from the user
            getchar();      //this function is used just incase an alphabet is inputted
                            }

        printf("\nEnter the amount you want to convert: \n");
             scanf("%lf", &amount);
                            getchar();

        while(amount>999999999999999){ // if amount entered is to high it will ask
for a lower amount
            printf("\nThe amount you have entered is too high, please try again and
enter a lower amount\n");
            printf("Enter the amount you want to convert: \n");
            scanf("%lf", &amount);
        }

          switch (choice){// the cases
        case 1:{ // pesos to dollar conversion
                    ToDollars(amount, rate); // calls the ToDollar subfunction
                     break;
            }
            case 2:{ // pesos to yen conversion
                    ToYen(amount, rate); // calls the ToYen subfunction
                                    break;
                            }
                            case 3:{ // pesos to won conversion
                                    ToWon(amount, rate); // calls the ToWon subfunction
                                    break;
                            }
                            case 4:{ // pesos to euro conversion
                                    ToEuro(amount, rate); // calls the ToEuro
subfunction
                                    break;
                            }
                            case 5:{ // pesos to pound conversion
                                    ToPounds(amount, rate); //calls the ToPound
subfunction
                                    break;
```

```
                        }
                    }

   printf("\n\nDo you want to convert again?");
   printf("\nYes / No: ");// Asks the user if they want to retry again
   scanf("%s", retry);// Stores the input in the variable entry

   system("cls"); //clears screen for cleaner program

   val1 = strcmp(retry,"Yes"); // Identifer for the retry variable for the loop to keep
running
   val2 = strcmp(retry,"yes"); // Second identifier for the retry variable for the loop to
keep running

}while(val1 == 0 ||  val2==0); // Iteration for the retry variable

}

void ToDollars(double amount, float rate[]){ //computes the coversion
   double limit, dollars;
                if (amount > 5700){ // if amount is higher than 5,700
               limit = amount * 0.85;    // limit will apply and the amount will only show
85 percent
               dollars = limit * rate[0]; // the limit will then be multiplied by the amount
of won where 1 pesos = 0.017 dollars
                        }
                        else                    // if statement so that this part will work if the
amount is lesser than 5,700
               dollars = amount * rate[0]; // the amount will be multiplied by 0.017
   printf("----------------------------------------------------------------");
   printf("\n-     For %.2lf Pesos, you would get = %.2lf $       -", amount, dollars); //
shows the user the conversion amount
   printf("\n----------------------------------------------------------------");
}

void ToYen(double amount,float rate[]){ // computes the conversion
   double limit, yen;
        if(amount>5700){ // if amount is higher than 5,700
           limit = amount * 0.85; // limit will apply and the amount will only show 85
percent
           yen = limit * rate[1]; // the limit will then be multiplied by the amount of won
where 1 pesos = 2.47 yen
```

```
        }
        else // if statement so that this part will work if the amount is lesser than 5,700
            yen = amount * rate[1]; // the amount will be multiplied by 2.47
      printf("-----------------------------------------------------------");
      printf("\n-     For %.2lf Pesos, you would get = %.2lf yen        -", amount, yen); //
shows the user the conversion amount
      printf("\n-----------------------------------------------------------");
}

void ToWon(double amount,float rate[]){ // computes the conversion
   double limit, won;
        if(amount>5700){ // if amount is higher than 5,700
            limit = amount * 0.85; // limit will apply and the amount will only show 85
percent
            won = limit * rate[2]; // the limit will then be multiplied by the amount of won
where 1 pesos = 23.62 won
        }
        else // if statement so that this part will work if the amount is lesser than 5,700
            won = amount * rate[2]; // the amount will be multiplied by 23.62
   printf("-----------------------------------------------------------");
   printf("\n-       For %.2lf Pesos, you would get = %.2lf won        -", amount, won); //
shows the user the conversion amount
   printf("\n-----------------------------------------------------------");

}

void ToEuro(double amount,float rate[]){ // computes the conversion
   double limit, euro;
        if(amount>5700){ // if amount is higher than 5,700
            limit = amount * 0.85; // limit will apply and the amount will only show 85
percent
            euro = limit * rate[3]; // the limit will then be multiplied by the amount of euro
where 1 pesos = 0.017 Euro
        }
        else // if statement so that this part will work if the amount is lesser than 5,700
            euro = amount * rate[3]; // the amount will be multiplied by 0.017
   printf("-----------------------------------------------------------");
   printf("\n-       For %.2lf Pesos, you would get = %.2lf euro        -", amount, euro); //
shows the user the conversion amount
   printf("\n-----------------------------------------------------------");
}
```

```
void ToPounds(double amount, float rate[]){ // computes the conversion
   double limit, pounds;
                if (amount > 5700){ // if amount is higher than 5,700
                limit = amount * 0.85; // limit will apply and the amount will only show 85
percent
                pounds = limit * rate[4]; // the limit will then be multiplied by the amount
of won where 1 pesos = 0.015 pounds
                }
                else                    // if statement so that this part will work if the amount
is lesser than 5,700
                pounds = amount * rate[4]; // the amount will be multiplied by 0.015
   printf("-----------------------------------------------------------------");
   printf("\n-     For %.2lf Pesos, you would get = %.2lf pounds        -", amount,
pounds); // shows the user the conversion amount
   printf("\n-----------------------------------------------------------------");
}
```