

CONVERTERS

REQUIREMENTS:

INTRODUCTION

This mini-project is a console application using the C programming language. This project compiled in VS code with the GCC compiler. In this console application, you can do basic billing managements like create bill, invoice, add items and delete items ... etc

COST AND FEATURES

When talking about the converters there are a lot of things that are to be taken into consideration. its features as wells as to generate an application which can be used in any Airports, Labs, Shops, Courier shops, Harbors etc.

Now the Common Features Include:

- Quantity Conversions
- Temperature (Kelvin,Celcius and Fahrenheit)
- Currency (USD,JPY and RMB)
- Mass (Ounces and Grams)

SWOT ANALYSIS

S-STRENGTH

- This project involves converting the quantities
- It reduces the manual work
- Reliable

W-WEAKNESS

- Need Compiler to execute
- Continuous Power Supply is required in Devices

O-OPPORTUNITIES

- Implemented in our day to day life and in our gadgets like Phones , Laptops etc

T-THREATS

- Security need to be implemented in code or else it will be easily modified

4W's and 1'H

Who:

The project can be used almost by all the officers or civilians in Airports, Labs, Shops, Courier shops, Harbors etc.. At the end, user satisfaction is the goal of the project.

What:

Conversions of the items can be done by this system.

When:

The project can be used when the conversion of quantities when required.

Where:

All the in Airports, Labs, Shops, Courier shops, Harbors and in calculators can use this software as the purpose of Conversion of quantities.

How:

It reduces the time and makes the quantity calculations precise and informable.

DETAIL REQUIREMENTS

HIGH LEVEL REQUIREMENTS:

ID	Description	Status
HLR1	OS (Windows 10/Linux)	Implemented
HLR2	C language	Implemented
HLR3	AMD/INTEL Processor	Implemented
HLR4	RAM(2GB)	Implemented
HLR5	ROM(2GB)	Implemented

LOW LEVEL REQUIREMENTS:

ID	Description	Status
LLR1	Input Values	Implemented
LLR2	Choose the Quantity	Implemented
LLR3	Ability to convert	Implemented

CODING:

```
#include <stdio.h>
int main()
{
    char choose_type;
    int temp_Choice;
    int currency_Choice;
    int mass_Choice;

    float usrinputF, usroutputF;           // Usr gives values for
    Fahrenheit;
    float usrinputC, usroutputC;           // Usr gives values for Celsius;
    float usroutputKC, usrinputK, usroutputK; // Usr gives values for Kelvin

    float fahrenheitToCelcius(float t1) { return ((9.0 / 5.0) * t1 + 32); }
    // variable that stores the converted F->C;

    float celciusToFahrenheit(float t2) { return ((t2 - 32) * (5.0 / 9.0)); }
    // variable that stores the converted C->F;
    float kelvinToCelcius(float t3) { return (t3 - 273.15); }
    // variable that stores the converted K->C;
    float celciusToKelvin(float t4) { return (t4 + 273.15); }
    // variable that stores the converted C->K;

    float usrinputUSDtoEuro, usrinputUSDtoJPY, usrinputUSDtoRMB;
    float usroutputUSDtoEuro, usroutputUSDtoJPY, usroutputUSDtoRMB;

    float USDtoEuro(float c1) { return (c1 * 0.87); }
    // Usr gives values for for USD to EURO;
    float USDtoJPY(float c2) { return (c2 * 111.09); }
    // Usr gives values for for USD to JPY;
    float USDtoRMB(float c3) { return (c3 * 6.82); }
    // Usr gives values for for USD to RMB;

    float usrinputOunce, usroutputPound;
    // Usr gives values for for Ounce;
    float usrinputGram;
    // Usr gives values for for Gram;

    float ounceToPounds(float m1) { return (m1 * 111.09); }
    // stores the converted Ounce->Pounds;
    float gramsToPounds(float m2) { return (m2 * 0.00220462); }
```

```

// stores the converted Grams->Pounds;

printf("Welcome to Unit Converter! \nHere is a list of conversation to choose
from: \nTemperature(T),\nCurrency(C),\nMass(M) \nPlease enter the codeword you
want to convert.\n");
scanf("%c", &choose_type);

if ((choose_type == 'T') || (choose_type == 't'))
{
    printf("Welcome to Temperature Converter! \nHere is a list of
conversations to choose from: \nEnter 1 for Fahrenheit to Celsius. \nEnter 2 for
Celsius to Fahrenheit. \nEnter 3 for Kelvin to Celcius. \nEnter 4 for Celcius to
Kelvin\n");
    scanf("%d", &temp_Choice);

    if (temp_Choice == 1)
    {
        printf("Enter the Fahrenheit value: \n");
        scanf("%f", &usrinputF);
        usroutputC = fahrenheitToCelcius(usrinputF);
        printf("Equivalent Celcius is:%2f", usroutputC);
    }
    else if (temp_Choice == 2)
    {
        printf("Enter the Celcius value: \n");
        scanf("%f", &usrinputC);
        usroutputF = celciusToFahrenheit(usrinputC);
        printf("Equivalent Fahrenheit is:%2f", usroutputF);
    }
    else if (temp_Choice == 3)
    {
        printf("Enter the Kelvin value: \n");
        scanf("%f", &usrinputK);
        usroutputKC = kelvinToCelcius(usrinputK);
        printf("Equivalent Celcius is:%2f", usroutputKC);
    }
    else if (temp_Choice == 4)
    {
        printf("Enter the Celcius value: \n");
        scanf("%f", &usrinputC);
        usroutputK = celciusToKelvin(usrinputC);
        printf("Equivalent Kelvin value is:%2f", usroutputK);
    }
}

```

```

        else
            printf("Please enter the correct choice. \n");
    }

    else if ((choose_type == 'C') || (choose_type == 'c'))
    {
        printf("Welcome to Currency Converter! \n Here is a list of conversations
to choose from: \nEnter 1 for USD to Euro. \nEnter 2 for USD to JPY. \nEnter 3
for USD to RMB. \n");
        scanf("%d", &currency_Choice);
        if (currency_Choice == 1)
        {
            printf("Enter the USD value: \n");
            scanf("%f", &usrinputUSDtoEuro);
            usroutputUSDtoEuro = USDtoEuro(usrinputUSDtoEuro);
            printf("Equivalent Euro value is:%2f", usroutputUSDtoEuro);
            // %.2f = rounds the float to only 2 decimal places;
        }
        else if (currency_Choice == 2)
        {
            printf("Enter the USD value: \n");
            scanf("%f", &usrinputUSDtoJPY);
            usroutputUSDtoJPY = USDtoJPY(usrinputUSDtoJPY);
            printf("Equivalent JPY value is:%2f", usroutputUSDtoJPY);
        }
        else if (currency_Choice == 3)
        {
            printf("Enter the USD value: \n");
            scanf("%f", &usrinputUSDtoRMB);
            usroutputUSDtoRMB = USDtoRMB(usrinputUSDtoRMB);
            printf("Equivalent RMB value is:%2f", usroutputUSDtoRMB);
        }
        else
            printf("Please enter correct choice. \n");
    }

    else if ((choose_type == 'M') || (choose_type == 'm'))
    {
        printf("Welcome to Mass Converter! \n Here is a list of conversations to
choose from: \nEnter 1 for ounces to pounds. \nEnter 2 for gram to pounds. \n");
        scanf("%d", &mass_Choice);
        if (mass_Choice == 1)
        {
            printf("Enter the ounce value: \n");

```

```

scanf("%f", &usrinputOunce);
usroutputPound = ounceToPounds(usrinputOunce);
printf("Equivalent Pound value is:%2f", usroutputPound);
}
else if (mass_Choice == 2)
{
    printf("Enter the Gram value: \n");
    scanf("%f", &usrinputGram);
    usroutputPound = gramsToPounds(usrinputGram);
    printf("Equivalent Pound value is:%2f", usroutputPound);
}
else
    printf("Please enter the correct choice. \n");
}
return 0;
}

```

TESTPLAN AND OUTPUT:

HIGH LEVEL TEST PLAN:

TEST ID	DESCRIPTION	EXP IP	EXP OP	ACTUAL OUTPUT
H_01	CHOOSE THE CATEGORY	T,t,M,m,C,c	Displays the conditions under the selected criteria	Displays the conditions under the selected criteria
H_02	CASES IN TEMPERATURE	1,2,3,4	Displays the type to type temperature conversion	Displays the type to type temperature conversion
H_03	CASES IN CURRENCY	1,2,3	Displays the type to type currency conversion	Displays the type to type currency conversion
H_04	CASES IN MASS	1,2	Displays the type to type mass conversion	Displays the type to type mass conversion

LOW LEVEL TEST PLAN:

TEST ID	DESCRIPTION	EXP IP	EXP OP	ACTUAL OUTPUT
H_01	CHOOSE THE CATEGORY	T,t,M,m,C,c	Displays the conditions under the selected criteria	Displays the conditions under the selected criteria
H_02	CASES IN TEMPERATURE	1,2,3,4	Displays the type to type temperature conversion	Displays the type to type temperature conversion
H_03	CASES IN CURRENCY	1,2,3	Displays the type to type currency conversion	Displays the type to type currency conversion
H_04	CASES IN MASS	1,2	Displays the type to type mass conversion	Displays the type to type mass conversion

OUTPUTS:

```

Here is a list of conversations to choose from:
Enter 1 for Fahrenheit to Celsius.
Enter 2 for Celsius to Fahrenheit.
Enter 3 for Kelvin to Celcius.
Enter 4 for Celcius to Kelvin
4
Please enter the Celcius:
273
Celcius: 0.000000

```

```

Here is a list of conversations to choose from:
Enter 1 for Fahrenheit to Celsius.
Enter 2 for Celsius to Fahrenheit.
Enter 3 for Kelvin to Celcius.
Enter 4 for Celcius to Kelvin
3
Please enter the Kelvin:
273
Celcius: -0.150000

```


Here is a list of conversations to choose from:

Enter 1 for Fahrenheit to Celsius.

Enter 2 for Celsius to Fahrenheit.

Enter 3 for Kelvin to Celsius.

Enter 4 for Celsius to Kelvin

2

Please enter the Celsius degree:

25

Fahrenheit: 77.000000

...Program finished with exit code 0

Press ENTER to exit console.

Welcome to Unit Converter!

Here is a list of conversation to choose from:

Temperature(T),

Currency(C),

Mass(M)

Please enter the codeword you want to convert.

T

Welcome to Temperature Converter!

Here is a list of conversations to choose from:

Enter 1 for Fahrenheit to Celsius.

Enter 2 for Celsius to Fahrenheit.

Enter 3 for Kelvin to Celsius.

Enter 4 for Celsius to Kelvin

1

Please enter the Fahrenheit degree:

45.22

Celsius: 7.222222

...Program finished with exit code 0

Press ENTER to exit console.

```
Welcome to Unit Converter!
Here is a list of conversation to choose from:
Temperature(T),
Currency(C),
Mass(M)
Please enter the codeword you want to convert.
m
Welcome to Mass Converter!
Here is a list of conversations to choose from:
Enter 1 for ounces to pounds.
Enter 2 for gram to pounds.
2
Please enter the gram amount:
2000
Pounds: 4.41
```

```
Welcome to Unit Converter!
Here is a list of conversation to choose from:
Temperature(T),
Currency(C),
Mass(M)
Please enter the codeword you want to convert.
m
Welcome to Mass Converter!
Here is a list of conversations to choose from:
Enter 1 for ounces to pounds.
Enter 2 for gram to pounds.
1
Please enter the ounce amount:
2000
Pounds: 125.00
```

```
Welcome to Unit Converter!
Here is a list of conversation to choose from:
Temperature(T),
Currency(C),
Mass(M)
Please enter the codeword you want to convert.
c
Welcome to Currency Converter!
Here is a list of conversations to choose from:
Enter 1 for USD to Euro.
Enter 2 for USD to JPY.
Enter 3 for USD to RMB.
3
Please enter the USD amount:
3400
RMB: 23188.00
```

```
Welcome to Unit Converter!
Here is a list of conversation to choose from:
Temperature(T),
Currency(C),
Mass(M)
Please enter the codeword you want to convert.
c
Welcome to Currency Converter!
Here is a list of conversations to choose from:
Enter 1 for USD to Euro.
Enter 2 for USD to JPY.
Enter 3 for USD to RMB.
2
Please enter the USD amount:
2000
JPY: 222180.00
```

```
Welcome to Unit Converter!
Here is a list of conversation to choose from:
Temperature(T),
Currency(C),
Mass(M)
Please enter the codeword you want to convert.
c
Welcome to Currency Converter!
Here is a list of conversations to choose from:
Enter 1 for USD to Euro.
Enter 2 for USD to JPY.
Enter 3 for USD to RMB.
1
Please enter the USD amount: $
25
Euro: 21.75
```

ARCHITECTURE:



