

MINI PROJECT >> "Everything Convertor"

REPORT USING LATEX

0.1 Objective of the Project-

This project aims at solving basic conversions used in daily life efficiently and without errors..

0.2 Function Description-

[F.1] FaranheitToCelcius - To convert Temprature given in faraheit to celsius

[F.2] CelsiusToFaranheit- To convert Temprature given in celsius to faraheit

[F.3] DecimalToBinary - To convert decimal numbers to binary form

[F.4] BinaryToDecimal -To convert binary numbers to decimal form

[F.5] DecimalToHexa - To convert decimal numbers to hexadecimal form

[F.6] DecimalToOctal - To convert decimal numbers to octal form.

[F.7] metpersecTokmperhour - To convert speed given in meters per second in kilometers per hour.

[F.8] kmperhourTometpersec - To convert speed given in km per hours to meter per second.

[F.9] CurrencyConversion - To convert indian currency to various other nations currency.

[F.10] weightconversion -To convert kilograms in various other weights

[F.11] meterTofeet - To convert length given in meters to feet

[F.12] feetToinches - To convert length given in feet to inches

0.3 Program Code-

```

Start  /*mini project : everything converter */
        include <iostream>, using namespace std;
        float FaranheitToCelcius(float faranheit); float CelsiusToFaranheit(float celsius); void DecimalToBinary(int n); int BinaryToDecimal(string n); string DecimalToHexa(int n); void DecimalToOctal(int n); void metpersecTokmperhour(float n); void kmperhourTometpersec(float n); void CurrencyConversion(float n); void weightconversion(float n);

        int main()  cout<<"Welcome to Everything convertor"<<endl; cout<<"please select options from list to convert "<<endl; cout<<"1.Temprature convertor"<<endl; cout<<"2.Number system convertor"<<endl; cout<<"3.speed convertor"<<endl; cout<<"4.currency convertor"<<endl; cout<<"5.weights convertor"<<endl; int a; //selected option cin<<a; if(a==1)
            cout<<"select one from the below given conversions"<<endl; cout<<"1.Faranheit to celsius"<<endl; cout<<"2.celsius to faranheit"<<endl; int b; //second selected option cin<<b;
            if (b==1) float p; //temporary variable FaranheitToCelcius(p);
            else if (b==2) float p; //temporary variable CelsiusToFaranheit(p);
            else  cout<<"invalid selection sorry "<<endl;
            else if (a==2)  cout<<"select one from the below given conversions"<<endl; cout<<"1.decimal to binary"<<endl; cout<<"2.binary to decimal"<<endl; cout<<"3.decimal to hexadecimal"<<endl; cout<<"4.decimal to octal"<<endl; int b; //second selection cin<<b; if (b==1) int c; //temporary variable DecimalToBinary(c); else if (b==2) string c; //temporary variable BinaryToDecimal(c); else if (b==3) int c; //temporary variable DecimalToHexa(c); else if (b==4) int c; //temporary variable DecimalToOctal(c); else  cout<<"invalid selection sorry"<<endl;
            else if (a==3)  cout<<"select one from the below given conversions"<<endl; cout<<"1.kmph to mps"<<endl; cout<<"2.mps to kmph"<<endl; int b; // second selection cin<<b; if(b==1) float p; kmperhourTometpersec(p); else if (b==2) float p; metpersecTokmperhour(p);
            else  cout<<"invalid selection sorry"<<endl;
            else if (a==4) float p; CurrencyConversion(p); else if(a==5) float p; weightconversion(p);
            cout<<"invalid selection sorry"<<endl;
            cout<<"program ended"<<endl; cout << "Thankyou" << endl;
            cout << "_____ " << endl;

```

```

    return 0;
    /*
    1.function to convert faranheit to celsius */ float FaranheitTo-
    Celcius(float faranheit) float celsius; cout << "Enter the temperature
    in fahrenheit cin << faranheit;
    celsius = 5 * (faranheit - 32) / 9; //converting fahreheit to
    celsius
    cout<<"Temp in celsius is : "<<celsius<<endl;
    /* 2. function to convert celsius to faranheit */ float CelsiusTo-
    Faranheit(float celsius) float faraheit,celsius; cout << "Enter the
    temperature in celsius cin << celcius; faraheit = (celcius * 9.0) / 5.0
    + 32; //converting celsius to faranheit cout<<"Temp in fahreheit
    is : "<<faraheit<<endl;
    /* 3. function to convert decimal numbers to binary numbers
    */ void DecimalToBinary(int n) cout<<"enter the number in decimal
    "<<endl; int arr[11], i = 0;int num; cin<<num; n=num; // Until the
    value of n becomes 0. while(n != 0) arr[i] = n i++; n = n / 2;
    cout<<"binary form of given number is : " ;
    // Printing the array in Reversed Order. for(i = i - 1; i >= 0;i-)
    cout << arr[i]; cout << endl;
    /* 4. function to convert binary numbers to decimal form */
    int BinaryToDecimal (string n) cout<<"enter the number in bi-
    nary"<<endl; cin<<n; string /* 5. function to convert decimal to
    hexadecimal */ string DecimalToHexa(int n) cout<<"enter the num-
    ber in decimal "; cin<<n; // answer string to store hexadecimal
    number string ans = "";
    while (n != 0) // remainder variable to store remainder int rem
    = 0;
    // char variable to store each character char ch; // storing re-
    mainder in rem variable. rem = n
    // check if temp < 10 if (rem < 10) ch = rem + 48; //ascii value
    of 48 is 0 else ch = rem + 55; //ascii value of 65 is A
    // updating the ans string with the character variable ans +=
    ch; n = n / 16;
    // reversing the ans string to get the final result int i = 0,
    j = ans.size() - 1; while(i <= j) swap(ans[i], ans[j]); i++; j--;
    cout<<"Hexadecimal form of given number is : "<<ans<<endl;
    /* 6. function to convert decimal to octal */
    void DecimalToOctal(int n) cout<<"enter the number in decimal
    "<<cin<<n; int octalNum = 0, placeValue = 1; int dNo =n; while (n

```

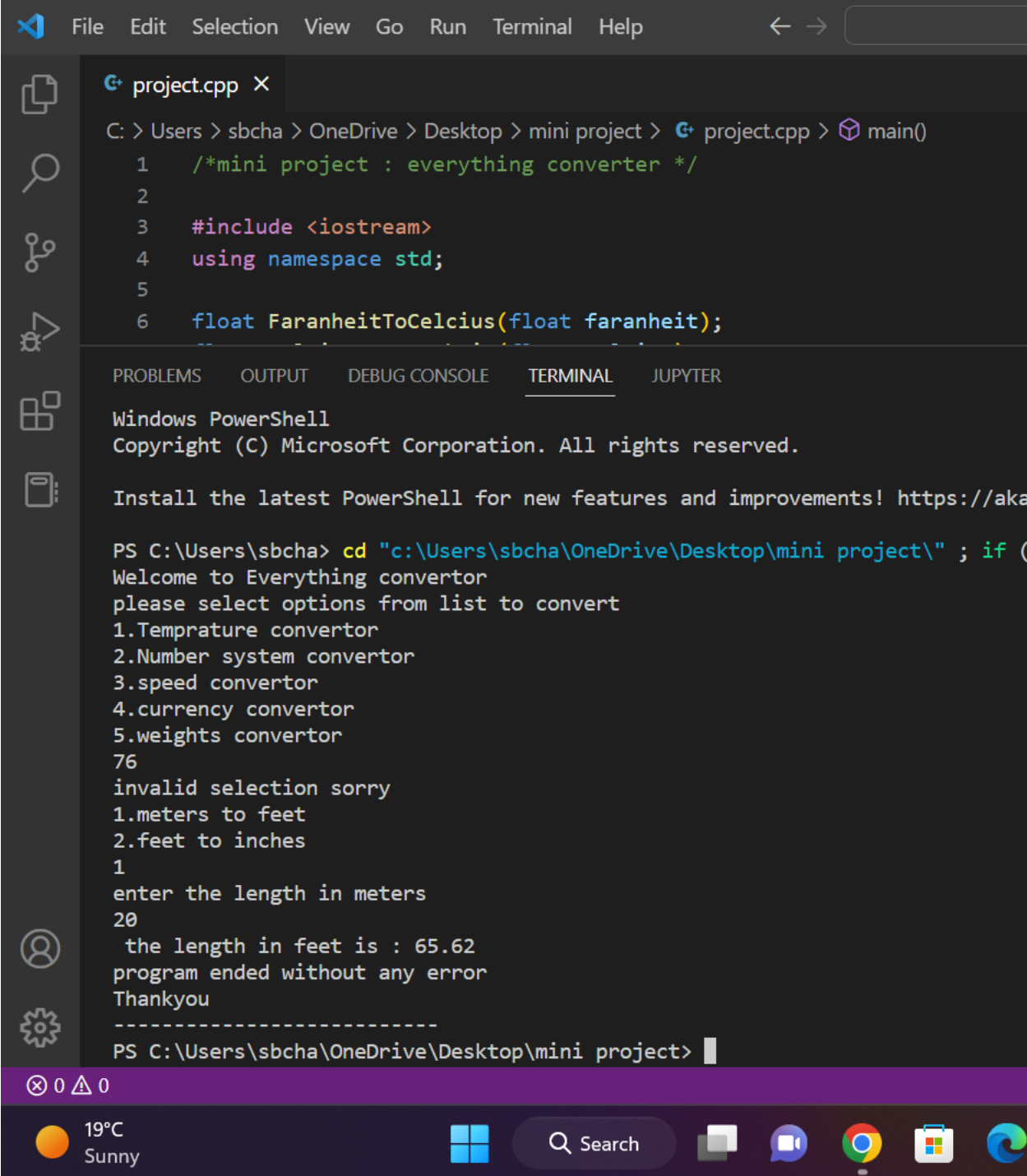
```

!= 0) octalNum += (n n /= 8; placeValue *= 10; cout<<"Octal
form of given number is : "<<octalNum<<endl;
/* 7. function to conver meters per sec to t to kilometers per
hour */
void metpersecTokmperhour(float n) cout<<"enter the speed in
meter per sec"<<endl; cin<<n; float ans = n*3.6; cout<<"the speed in
kilometers per hour is "<<ans<<endl;
/* 8. function to convert kilometers per hour to meters per
second */
void kmperhourTometpersec(float n) cout<<"enter the speed in
kilometers per hour"<<endl; cin<<n; float ans = n/3.6; cout<<"the
speed in meters per sec is "<<ans<<endl;
/* 9. function to convert currencies */
void CurrencyConversion(float n) cout<<"enter amount of rupees
"; cin<<n; float rupees ; float britishPounds = n*0.010 ; float usdol-
lars= n*0.012; float euro = n*0.012 ; float deutschmark = n*0.0232;
float yen =n*1.73; cout << " US dollars" <<usdollars<< endl ; cout <<
" British Pounds : " <<britishPounds<< endl ; cout << " French euro :
" <<euro<< endl ; cout << " German Deutschmark : " <<deutschmark<<
endl ; cout << " Japanese Yen : " <<yen<< endl ;
/* 10. function to convert weights */ void weightconversion(float
n) cout<<"enter amount of weight in kilograms "<<endl; cin<<n; float
kilograms ; float Pounds = n*2.20462 ; float ounces= n*35.274;
float grams = n*1000 ;
cout << " pounds : "<<Pounds<< endl ; cout << " ounces : " <<ounces<<
endl ; cout << " grams : " <<grams<< endl ;

```

end

0.4 Output-



The screenshot shows the Visual Studio Code interface. The editor window displays a C++ file named `project.cpp` with the following code:

```
1  /*mini project : everything converter */
2
3  #include <iostream>
4  using namespace std;
5
6  float FaranheitToCelcius(float faranheit);
```

The terminal window shows the execution of the program. The output is as follows:

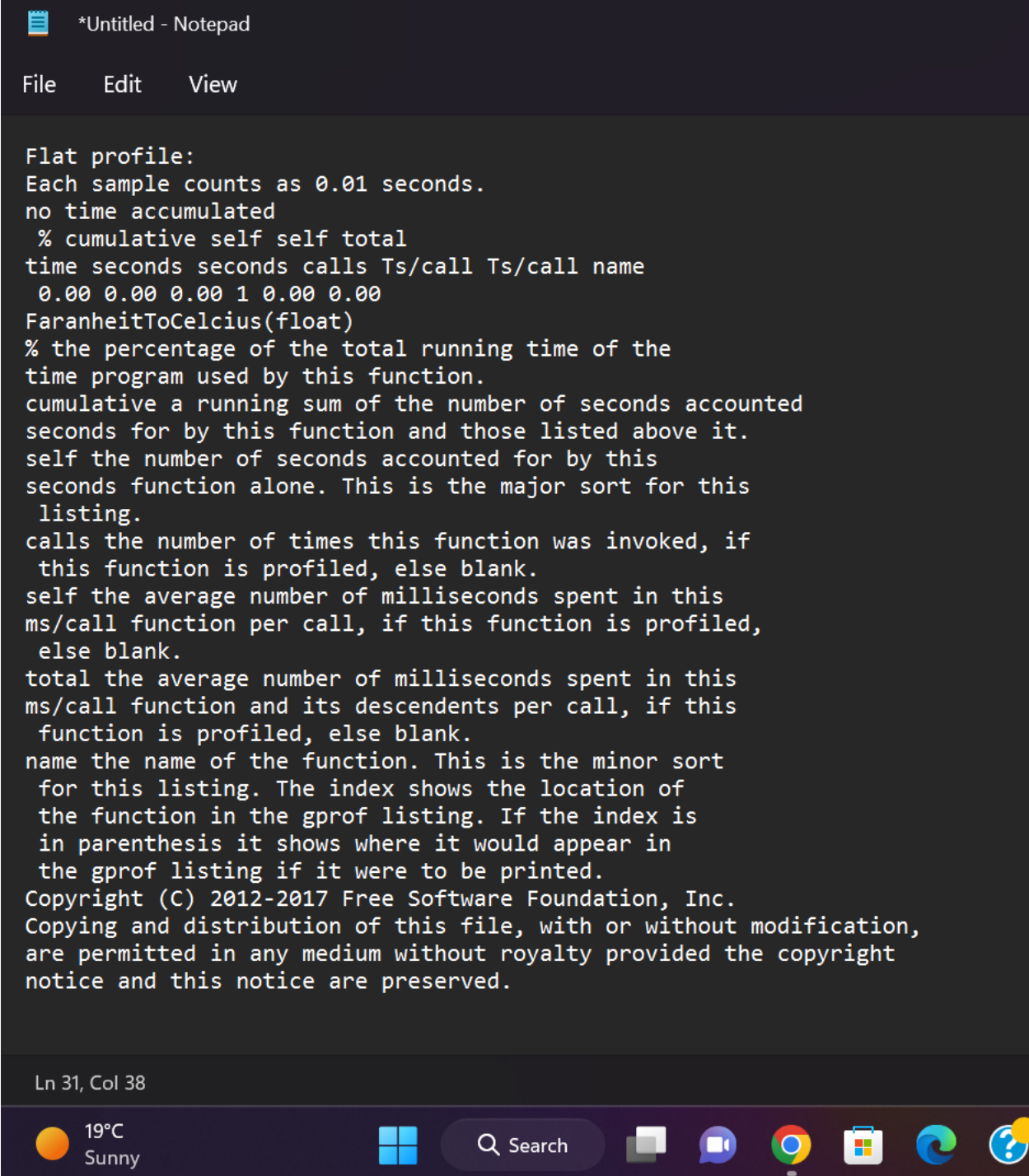
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PowerShellLatest

PS C:\Users\sbcha> cd "c:\Users\sbcha\OneDrive\Desktop\mini project\" ; if ($?) {
Welcome to Everything convertor
please select options from list to convert
1.Temprature convertor
2.Number system convertor
3.speed convertor
4.currency convertor
5.weights convertor
76
invalid selection sorry
1.meters to feet
2.feet to inches
1
enter the length in meters
20
the length in feet is : 65.62
program ended without any error
Thankyou
-----
PS C:\Users\sbcha\OneDrive\Desktop\mini project>
```

The status bar at the bottom shows 0 errors, 0 warnings, and 0 information messages. The system tray at the bottom indicates a temperature of 19°C and a sunny weather condition.

0.5 Profiling-



```
*Untitled - Notepad

File Edit View


Flat profile:
Each sample counts as 0.01 seconds.
no time accumulated
% cumulative self self total
time seconds seconds calls Ts/call Ts/call name
0.00 0.00 0.00 1 0.00 0.00
FaranheitToCelcius(float)
% the percentage of the total running time of the
time program used by this function.
cumulative a running sum of the number of seconds accounted
seconds for by this function and those listed above it.
self the number of seconds accounted for by this
seconds function alone. This is the major sort for this
listing.
calls the number of times this function was invoked, if
this function is profiled, else blank.
self the average number of milliseconds spent in this
ms/call function per call, if this function is profiled,
else blank.
total the average number of milliseconds spent in this
ms/call function and its descendents per call, if this
function is profiled, else blank.
name the name of the function. This is the minor sort
for this listing. The index shows the location of
the function in the gprof listing. If the index is
in parenthesis it shows where it would appear in
the gprof listing if it were to be printed.
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Ln 31, Col 38
```

19°C Sunny

Search

0.6 Debugging-



```
C:\Windows\System32\cmd.e X + v
GNU gdb (GDB) 7.6.1
Copyright (C) 2013 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law. Type "show
and "show warranty" for details.
This GDB was configured as "mingw32".
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>...
Reading symbols from C:\Users\sbatcha\OneDrive\Desktop\mini project\
(gdb) break 100
Breakpoint 1 at 0x402fc8: file ../../src/gcc-6.3.0/libgcc/confi
(gdb) run
Starting program: C:\Users\sbatcha\OneDrive\Desktop\mini project/pro
[New Thread 16276.0x1574]
[New Thread 16276.0x27f8]
[New Thread 16276.0x395c]
[New Thread 16276.0xc80]
[New Thread 16276.0x93c]
Welcome to Everything convertor
please select options from list to convert
1.Temperature convertor
2.Number system convertor
3.speed convertor
4.currency convertor
5.weights convertor
1
select one from the below given conversions
1.Faranheit to celsius
2.celsius to faranheit
2
Enter the temperature in celsius
```

0.7 Miscellaneous Data-**Starting Date** -14/11/22**Starting Day** -Monday**Ending Date** -18/11/22**Ending Day** -Friday**Total Time required** - 4 days**Total line of code** - approx 400 lines of code**Total number of functions** - 12 functions used**Language Used** - C++ Language**Profiler used** - Gprof**Debugger used** - GDB**Project Title** - Everything Convertor