A REPORT ON NUMBER SYSTEM CONVERSION SYSTEM:

Description

* The number system conversion project is developed using C Programming. Few most common bases are decimal, binary, octal, hexadecimal. This system converts a decimal number to the number of another base. Since digital logic operation requires a lot of calculations, this system makes the task easier.

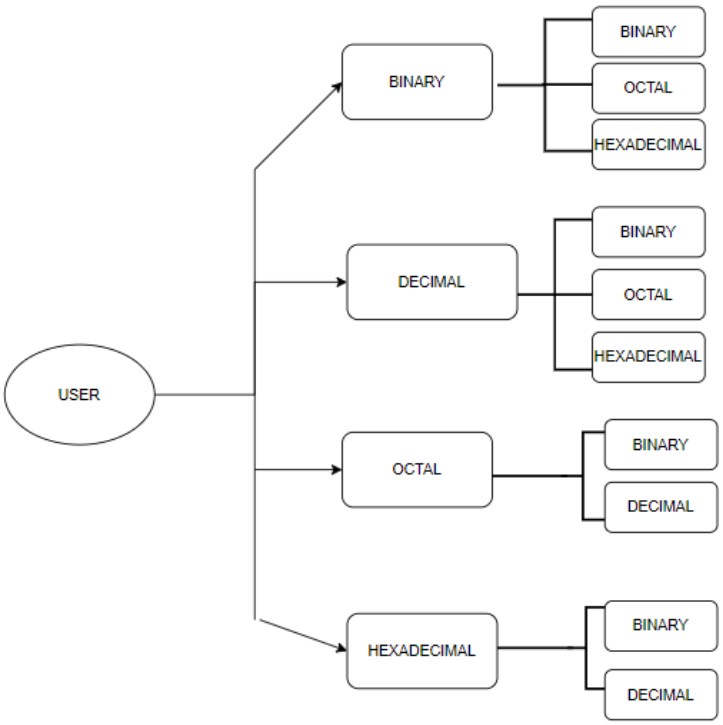
Conversions can be carried out in a single step or in a multistep manner. Below are the conversions of number system offered.

* Decimal to binary
* Decimal to Octal
* Decimal to hexadecimal
* Binary to octal
* Binary to hexadecimal
* Binary to decimal
* Hexadecimal to decimal
* Hexadecimal to Binary
* Octal to Binary
* Octal to Decimal

Need for this system:

There is a requirement to convert the numbers from one base system to other in the digital domain. To make this task easy and to avoid the tedious mathematical calculations, this system is developed which helps the students as well as digital circuit designers to easily convert the numbers. This can also be used by the students to practice manually and verify their answers to improve their knowledge, reasoning and accuracy.

DEFINING THE SYSTEM FUNCTION BY A FLOWCHART:



For this project, there are 3 files A maincode file, a header file, a function file.

The code is written and is tested in order to get the required output and the quality of the code is checked.

The output is as follows:

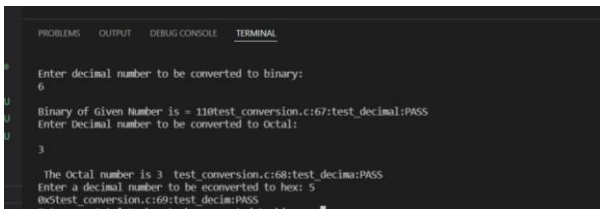
```
Enter a decimal number to be econverted to hex: 4
0x4test_conversion.c:69:test_decim:PASS
Enter any Octal Number to be converted to binary: 2

Equivalent Binary value = 010test_conversion.c:70:test_octal:PASS
Input an octal number (using digit 0 - 7) :7
The equivalent Decimal  Number : 7

test_conversion.c:48:test_octa:FAIL: Expected 0 Was 37
Enter hexadecimal number to be converted to decimal: Decimal number = 0
test_conversion.c:72:test_hexadecimal:PASS
```

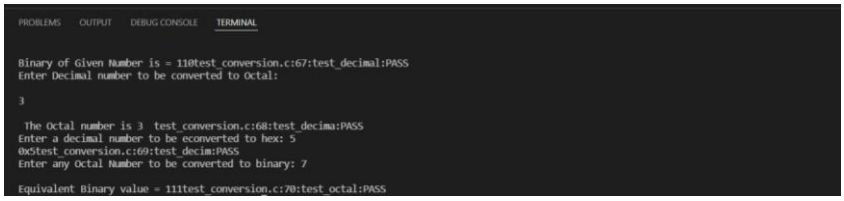
```
101

 The decimal number of given number is 5       test_conversion.c:64:test_binary:PASS
Input a binary number to be converted to octal:1010

The Binary Number : 1010
The equivalent Octal  Number : 12

test_conversion.c:18:test_binar:FAIL: Expected 0 Was 62
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

The Binary Number : 1010
The equivalent Octal  Number : 12

test_conversion.c:18:test_binar:FAIL: Expected 0 Was 62
Enter the binary number to hexadecimal: 0101
Equivalent hexadecimal value: 5test_conversion.c:66:test_bina:PASS

Enter decimal number to be converted to binary:
6

Binary of Given Number is = 110test_conversion.c:67:test_decimal:PASS
```

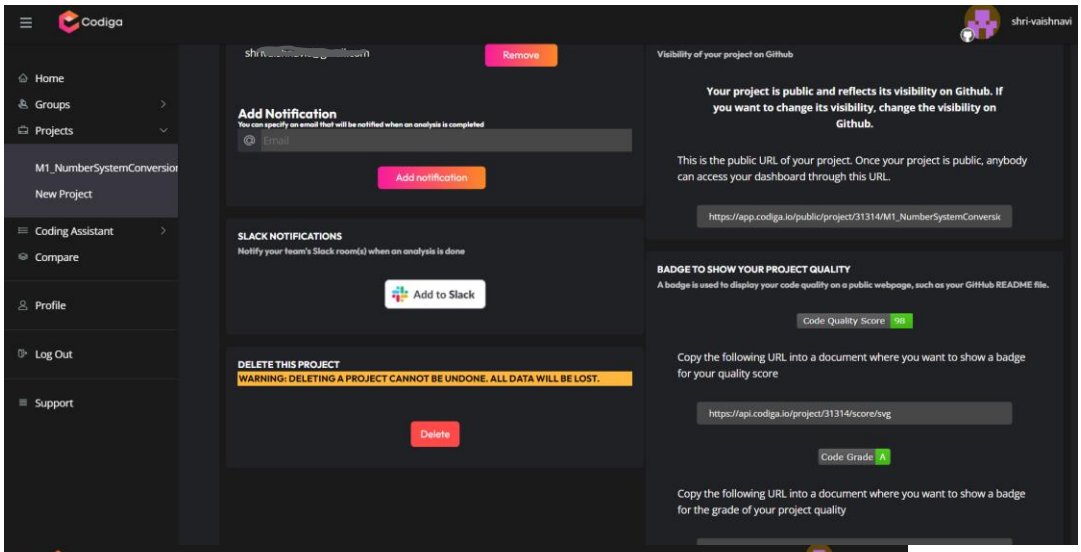

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
The decimal number of given number is 5 test_conversion.c:64:test_binary:PASS
Input a binary number to be converted to octal:1010
The Binary Number : 1010
The equivalent Octal Number : 12
test_conversion.c:18:test_binar:FAIL: Expected 0 Was 62
Enter the binary number to hexadecimal: 0101
Equivalent hexadecimal value: 5test_conversion.c:66:test_bina:PASS

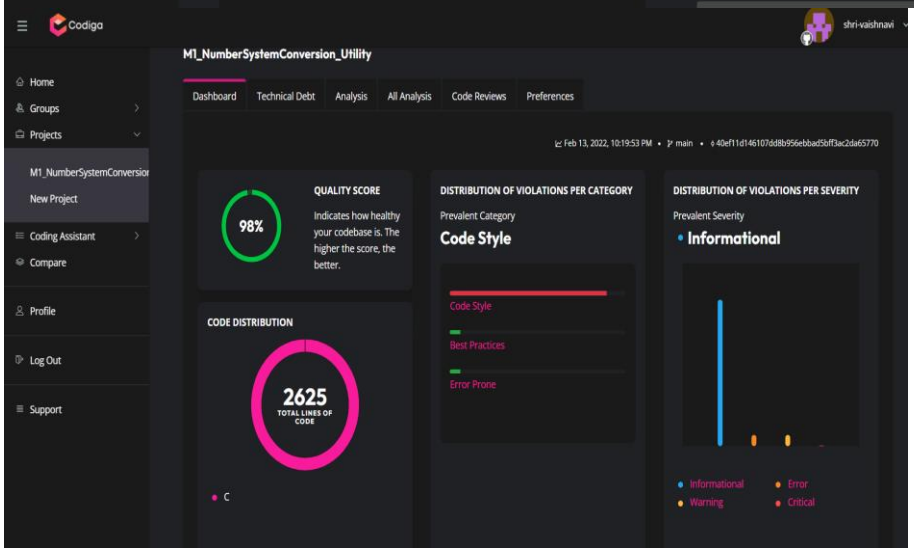

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Enter the binary number to hexadecimal: 0101
Equivalent hexadecimal value: 5test_conversion.c:66:test_bina:PASS
Enter decimal number to be converted to binary:
6
Binary of Given Number is = 110test_conversion.c:67:test_decimal:PASS
Enter Decimal number to be converted to Octal:
3
The Octal number is 3 test_conversion.c:68:test_decima:PASS

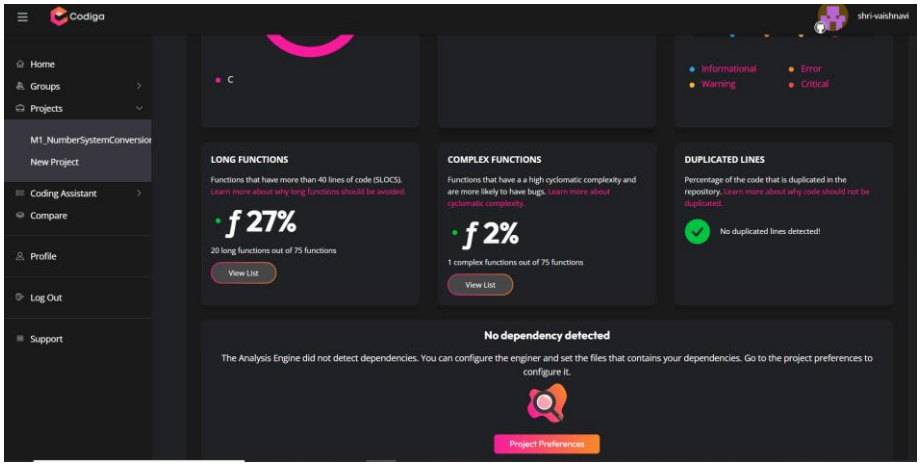

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Enter decimal number to be converted to binary:
6
Binary of Given Number is = 110test_conversion.c:67:test_decimal:PASS
Enter Decimal number to be converted to Octal:
3
The Octal number is 3 test_conversion.c:68:test_decima:PASS
Enter a decimal number to be econverted to hex: 5
0x5test_conversion.c:69:test_decim:PASS


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Binary of Given Number is = 110test_conversion.c:67:test_decimal:PASS
Enter Decimal number to be converted to Octal:
3
The Octal number is 3 test_conversion.c:68:test_decima:PASS
Enter a decimal number to be econverted to hex: 5
0x5test_conversion.c:69:test_decim:PASS
Enter any Octal Number to be converted to binary: 7
Equivalent Binary value = 111test_conversion.c:70:test_octal:PASS

The code and code quality was tested.







Conclusion:

The number system conversion system was successful in converting the numbers from one base to the number of other base. Thus, the code was executed and quality was also tested.