/\* C programming source code to convert either binary to octal or octal to binary according to data entered by user. \*/

#include <stdio.h>

#include <math.h>

int binary\_octal(int n);

int octal\_binary(int n);

int main()

{

int n;

char c;

printf("Instructions:\n");

printf("1. Enter alphabet 'o' to convert binary to octal.\n");

printf("2. Enter alphabet 'b' to convert octal to binary.\n");

scanf("%c",&c);

if ( c=='o' || c=='O')

{

printf("Enter a binary number: ");

scanf("%d",&n);

printf("%d in binary = %d in octal", n, binary\_octal(n));

}

if ( c=='b' || c=='B')

{

printf("Enter a octal number: ");

scanf("%d",&n);

printf("%d in octal = %d in binary",n, octal\_binary(n));

}

return 0;

}

int binary\_octal(int n) /\* Function to convert binary to octal. \*/

{

int octal=0, decimal=0, i=0;

while(n!=0)

{

decimal+=(n%10)\*pow(2,i);

++i;

n/=10;

}

/\*At this point, the decimal variable contains corresponding decimal value of binary number. \*/

i=1;

while (decimal!=0)

{

octal+=(decimal%8)\*i;

decimal/=8;

i\*=10;

}

return octal;

}

int octal\_binary(int n) /\* Function to convert octal to binary.\*/

{

int decimal=0, binary=0, i=0;

while (n!=0)

{

decimal+=(n%10)\*pow(8,i);

++i;

n/=10;

}

/\* At this point, the decimal variable contains corresponding decimal value of that octal number. \*/

i=1;

while(decimal!=0)

{

binary+=(decimal%2)\*i;

decimal/=2;

i\*=10;

}

return binary;

}

Output

Instructions:

1. Enter alphabet 'o' to convert binary to octal.

2. Enter alphabet 'b' convert octal to binary.

o

Enter a binary number: 11011

11011 in binary = 33 in octal