

AIM:

To write a C program to implement binary to decimal conversion.

ALGORITHM:

1) Start

2) Read

the binary number from the user, say 'n'

3) Initialize the decimal number, d=0

4) Initialize i=0

5) Repeat while n != 0:

i.

Extract the last digit

by: remainder = n % 10

ii.

n = n/10

iii.

d = d + (remainder * 2ⁱ)

iv.

Increment i by 1

6) Display

the decimal number, d

7) Stop

PROGRAM:

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
int num, binary_num, decimal_num = 0, base= 1, rem;
```

```
printf (" Enter a binary number with the combination of 0s and 1s \n");
```

```
scanf ("%d", &num);
```

```
binary_num = num;
```

```
while ( num > 0)
```

```
{
```

```
rem = num % 10;
```

```
decimal_num = decimal_num + rem * base;
```

```
num = num / 10;
```

```
base = base * 2;
```

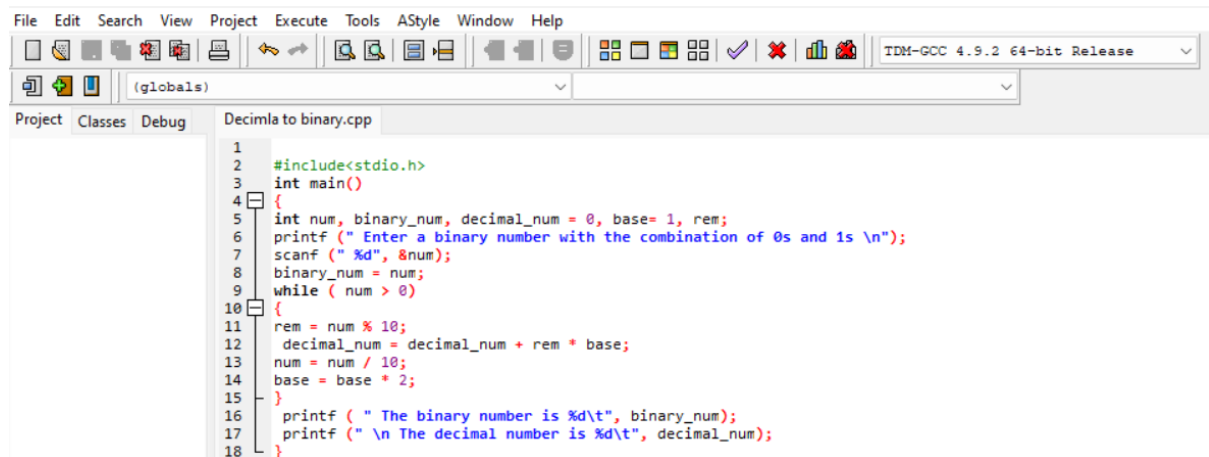
```
}
```

```
printf ( " The binary number is %d\t", binary_num);
```

```
printf (" \n The decimal number is %d\t", decimal_num);
```

```
}
```

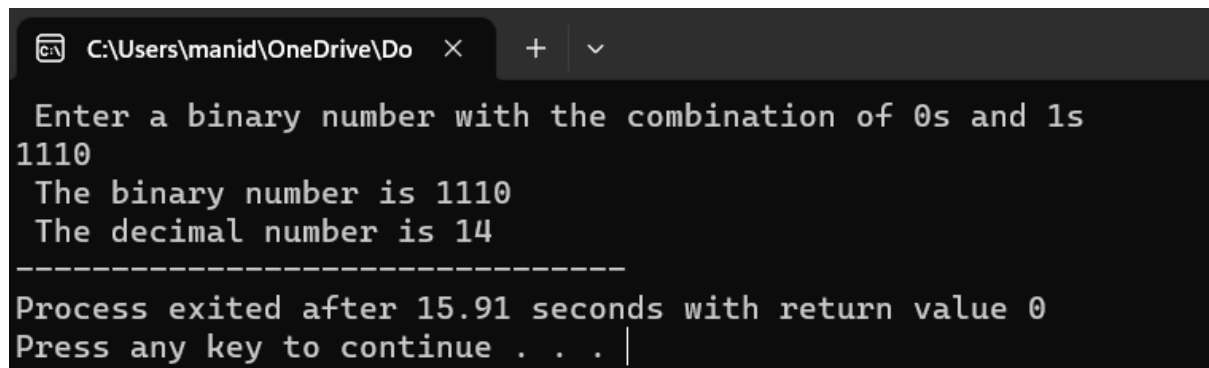
INPUT:



The screenshot shows the DevC++ IDE with the file 'Decimla to binary.cpp' open. The code is as follows:

```
1
2 #include<stdio.h>
3 int main()
4 {
5     int num, binary_num, decimal_num = 0, base= 1, rem;
6     printf (" Enter a binary number with the combination of 0s and 1s \n");
7     scanf ("%d", &num);
8     binary_num = num;
9     while ( num > 0)
10    {
11        rem = num % 10;
12        decimal_num = decimal_num + rem * base;
13        num = num / 10;
14        base = base * 2;
15    }
16    printf ( " The binary number is %d\t", binary_num);
17    printf (" \n The decimal number is %d\t", decimal_num);
18 }
```

OUTPUT:



The screenshot shows a Windows command prompt window with the following output:

```
C:\Users\manid\OneDrive\Do  x  +  v

Enter a binary number with the combination of 0s and 1s
1110
The binary number is 1110
The decimal number is 14
-----
Process exited after 15.91 seconds with return value 0
Press any key to continue . . . |
```

RESULT: Thus the program was executed successfully using DevC++

