

BINARY TO DECIMAL CONVERSION

EXP NO: 26

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) Initialise the decimal number, d=0
- 4) Initialise i=0
- 5) Repeat while n != 0:
 - i. Extract the last digit by: remainder = n % 10
 - ii. $n = n/10$
 - iii. $d = d + (\text{remainder} * 2^{\text{i}})$
 - iv. Increment i by 1
- 6) Display the decimal number, d
- 7) Stop

PROGRAM:

```
#include<stdio.h>

Void 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:

OUTPUT:

The screenshot shows the DevC++ IDE with the following components:

- Source Code Editor:** Displays the C++ program code for converting a decimal number to binary.
- Compiler Window:** Shows the compilation output:


```

Output Filename: C:\Users\DELL E5480\Desktop\binary to decimal.exe
Output Size: 322.974609375 KiB
Compilation Time: 0.34s

```
- Console Window:** Displays the program's execution output:


```

Enter a binary number with the combination of 0s and 1s
100000
The binary number is 100000
The decimal number is 32
-----
Process exited after 5.502 seconds with return value 0
Press any key to continue . . .

```

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