

SIMPLE BITWISE PROGRAM

AIM:

To demonstrate a simple bitwise program using the macro

PROCEDURE:

1. Declare two integer variables inputValue and OutputValue.
2. Set OutputValue = 0.
3. Read the value of inputValue from the user.
4. Repeat the following steps for i = 0 to 3
5. Read the bit at position i of inputValue using READBIT. If the bit is 1, set the bit at position i + 4 of OutputValue using SETBIT.
6. The bit is 0, clear the bit at position i + 4 of OutputValue using RESETBIT.
7. Print the value of OutputValue. Stop the program.

PROGRAM:

```
/*
* Program to demonstrate Bitwise operations
* Author    : MUTHUGANESH S
* Date      : 09/01/2026
* Filename  : BitwiseProgram.c
* retval    : void
*/
//header file
#include <stdio.h>

//macro definitions for bitwise operations
#define POS 4
#define ONE 1

//macro to read bit at POS
#define READBIT(VAR,BIT) ((VAR >> BIT) & ONE)

//macro to set bit at POS
#define SETBIT(VAR,BIT) (VAR |= (ONE << BIT))

int main(){
    int inputValue, OutputValue=0;
    printf("Enter an integer inputValue: ");
    scanf("%d", &inputValue); //Get input from user

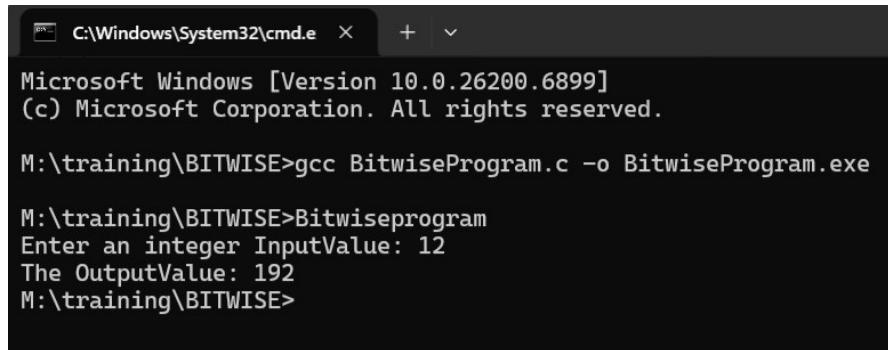
    //Left shift the bits of inputValue by POS and store in OutputValue
    for(int i=0;i<POS;i++){

        if(READBIT(inputValue,i)==ONE){

            SETBIT(OutputValue,i+POS);
        }
    }
}
```

```
//Display the output value  
printf("The OutputValue: %d", OutputValue);  
return 0;  
}
```

OUTPUT:



A screenshot of a Microsoft Windows Command Prompt window titled "C:\Windows\System32\cmd.e". The window shows the following text:

```
Microsoft Windows [Version 10.0.26200.6899]  
(c) Microsoft Corporation. All rights reserved.  
  
M:\training\BITWISE>gcc BitwiseProgram.c -o BitwiseProgram.exe  
  
M:\training\BITWISE>Bitwiseprogram  
Enter an integer InputValue: 12  
The OutputValue: 192  
M:\training\BITWISE>
```