

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. If 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++){

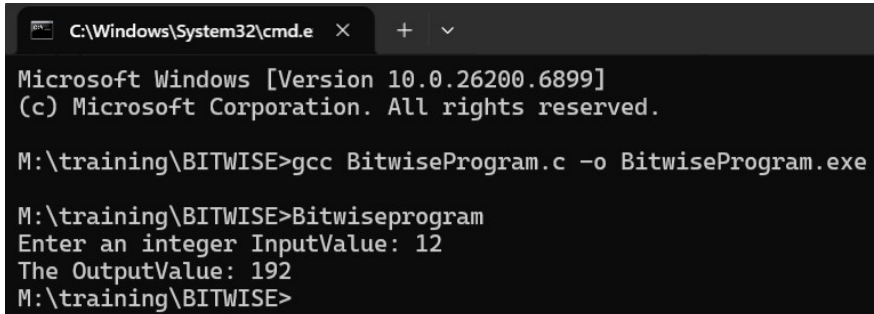
        if(READBIT(InputValue,i)==ONE){

            SETBIT(OutputValue,i+POS);

        }
    }
}
```

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

OUTPUT:



A screenshot of a Windows command prompt window. The title bar shows 'C:\Windows\System32\cmd.e' with a close button and a dropdown arrow. The window content displays 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>
```