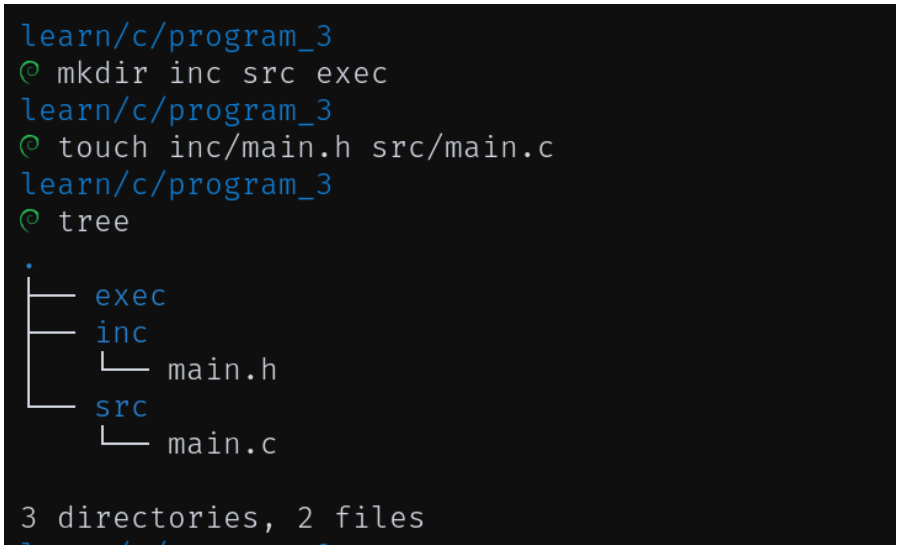
Create two variables InputValue and OutputValue, get the value of InputValue from user, Now by using Macro READBIT read last 4 bits individually and use SETBIT or RESETBIT macro to change the MSB 4bits of the OutputValue and print the output.

Step 1 . Created the directory structure using following command

mkdir src inc exec && touch src/main.c inc/main.h



Step 2. code inside `main.h`

```
#ifndef MAIN_H
#define MAIN_H

// read bit at postion 'pos'
#define READBIT(value,pos)  (((value)>>(pos))&1)
// set bit at postion 'pos'
#define SETBIT(value,pos)   ((value)|= (1<<(pos)))
// reset bit at postion 'pos'
```

```
#define RESETBIT(value,pos) ((value)&= ~(1<<(pos)))

#endif
```

Step 3. code inside `main.c`

```
#include"main.h"
#include<stdio.h>
#include<inttypes.h>

int main(){
  uint8_t inputValue,outputValue;

  // get inputValue from user
  printf("Enter 8-bit value (0 to 255 ) : ");
  scanf("%hhd",&inputValue);

  // read each bit using READBIT micro
  printf("value in Binary : ");
  int bit_pos; // bit position
  for(bit_pos=7;bit_pos>=0;bit_pos--){
     printf("%d",READBIT(inputValue,bit_pos));
  }
  printf("\n");

  // set 4 MSB bit using SETBIT micro
  outputValue=inputValue;
  for(bit_pos=7;bit_pos>=4;bit_pos--){
     SETBIT(outputValue,bit_pos);
  }
  printf("After setting 4 MSB : %u\n",outputValue);
```

```
  // reset 4 MSB bit using RESETBIT micro
  outputValue=inputValue;
  for(bit_pos=7;bit_pos>=4;bit_pos--){
     RESETBIT(outputValue,bit_pos);
  }
  printf("After resetting 4 MSB : %u\n",outputValue);
  return 0;
}
```

Step 4 . Compiling

gcc -Wall -iquote inc -o exec/program src/main.c

Step 5. Running the program

./exec/program

Output