

PROGRAM TITLE: Read an integer in hex and reorder the bytes as shown in the example below.

Eg. input - 0xABCDEF23
output - 0x23ABEFCD

PROGRAM ALGORITHM:

```
algo hexrearrange()
{
    input n
    shift n by required places while using bitwise OR to combine
    subsequent shifts
    print rearranged code
}
```

PROGRAM CODE:

```
/* C Program to rearrange given Hex code*/
#include <stdio.h>
#include <stdlib.h>
int main()
{
    unsigned int n;

    /*Read the input*/
    printf("Enter the Hex code:");
    scanf("%0x",&n);

    /*Rearranging the input according to the question*/
    printf("The rearranged code is:%0x\n",((n&0x00ff0000)>>16)|
((n&0x000000ff)<<24)|((n&0xff000000)>>8)|(n&0x0000ff00));
    return 0;
}
```

OUTPUT:**Set 1:**

Enter the Hex code:ABCDEF23
The rearranged code is:23abefcd

Set 2:

Enter the Hex code:cdef23ab
The rearranged code is:abcd23ef

DISCUSSION:

The Program assumes that the inputs consist of 8 Hex characters. The other anomaly that we detected while doing the program is that the computer accepts both uppercase and lowercase Hex characters (A,B,C,D,E,F) but when showing the result it displays only lowercase.