

**Module: R1: C Programming**  
**Section: Intro to C Task: 2's Complement**

**Task 1.1****Two's Complement of 16 bit signed numbers**

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**Code Snippet:**

```
#include <stdio.h>

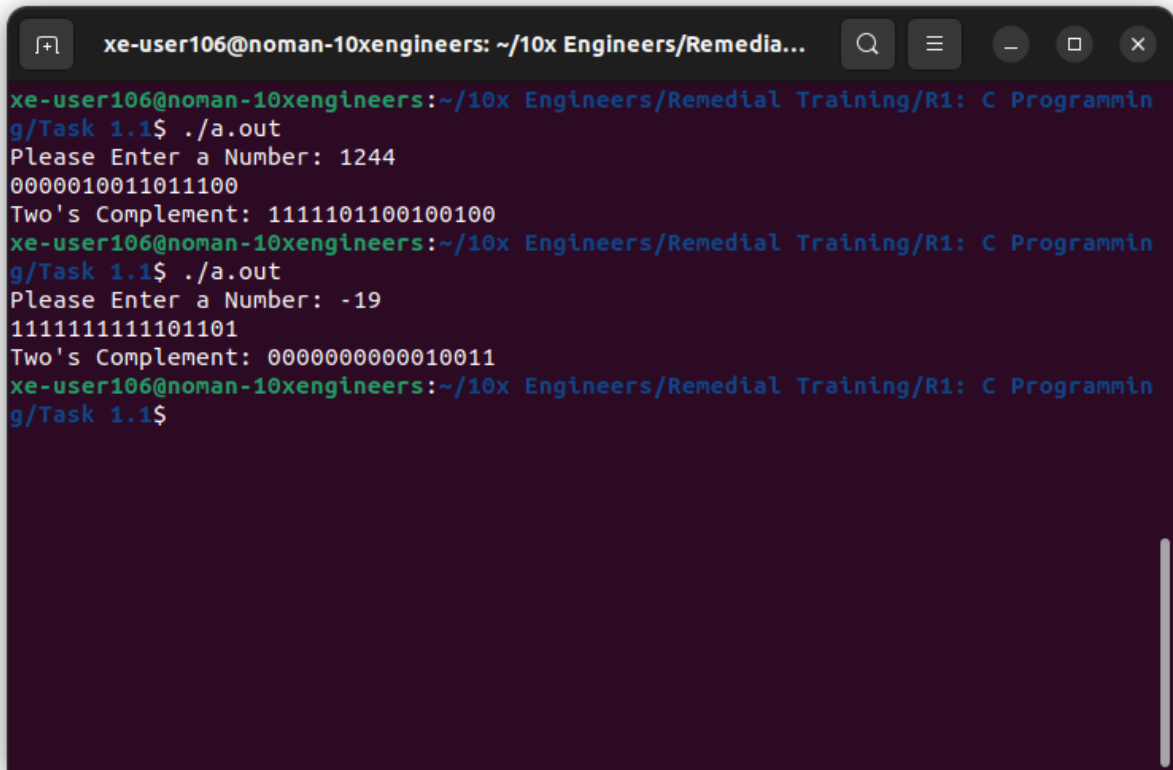
void decToBin(int dec) {
    for (int bit = 15; bit >= 0; bit--) {
        int k = (unsigned int)dec >> bit;
        printf("%d", (k & 1) ? 1 : 0);
    }
    printf("\n");
}

int main(void) {
    int n;
    printf("Please Enter a Number: ");
    scanf("%d", &n);
    decToBin(n);

    // 2's Complement
    short complement = ~n + 1;

    printf("Two's Complement: ");
    for (int bit = 15; bit >= 0; bit--){
        printf("%d", (complement >> bit) & 1);
    }

    return 0;
}
```

**Output:**

```
xe-user106@noman-10xengineers: ~/10x Engineers/Remedia...
xe-user106@noman-10xengineers:~/10x Engineers/Remedial Training/R1: C Programmin
g/Task 1.1$ ./a.out
Please Enter a Number: 1244
0000010011011100
Two's Complement: 111101100100100
xe-user106@noman-10xengineers:~/10x Engineers/Remedial Training/R1: C Programmin
g/Task 1.1$ ./a.out
Please Enter a Number: -19
111111111101101
Two's Complement: 0000000000010011
xe-user106@noman-10xengineers:~/10x Engineers/Remedial Training/R1: C Programmin
g/Task 1.1$
```