Operators in C
Lecture 2 Assignments
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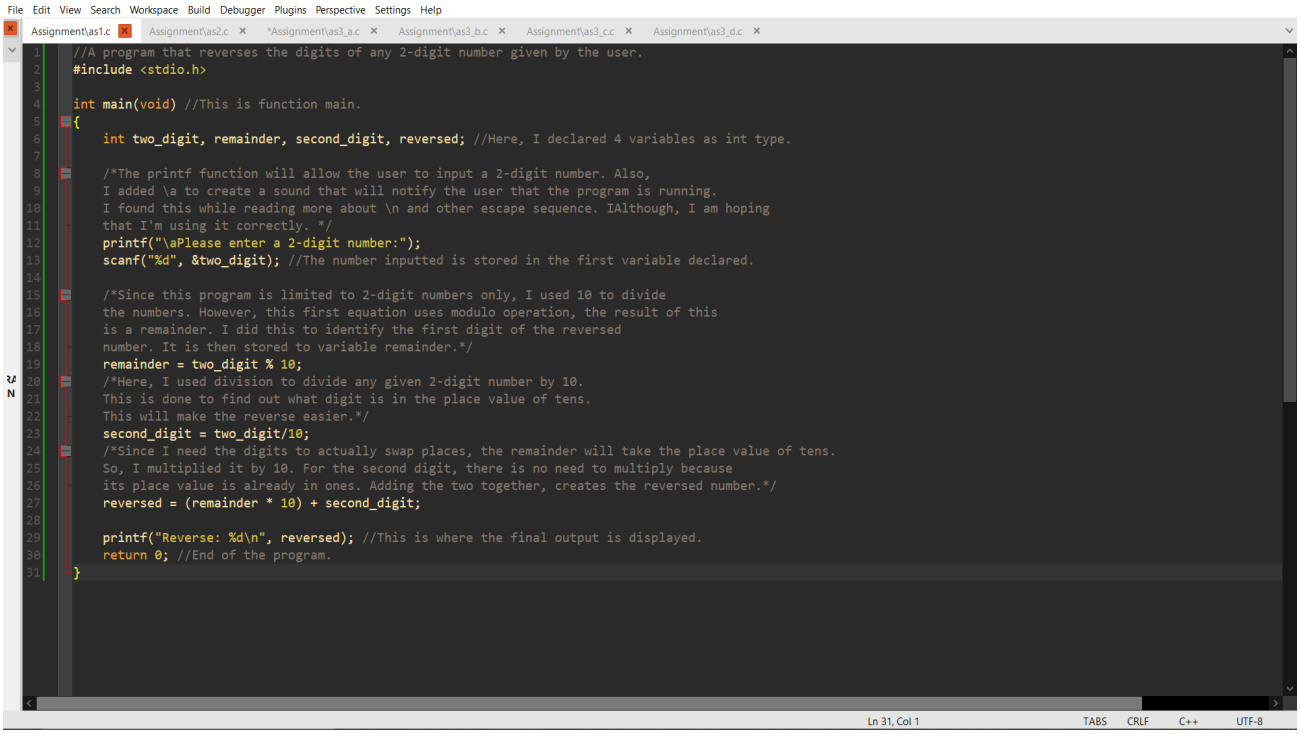
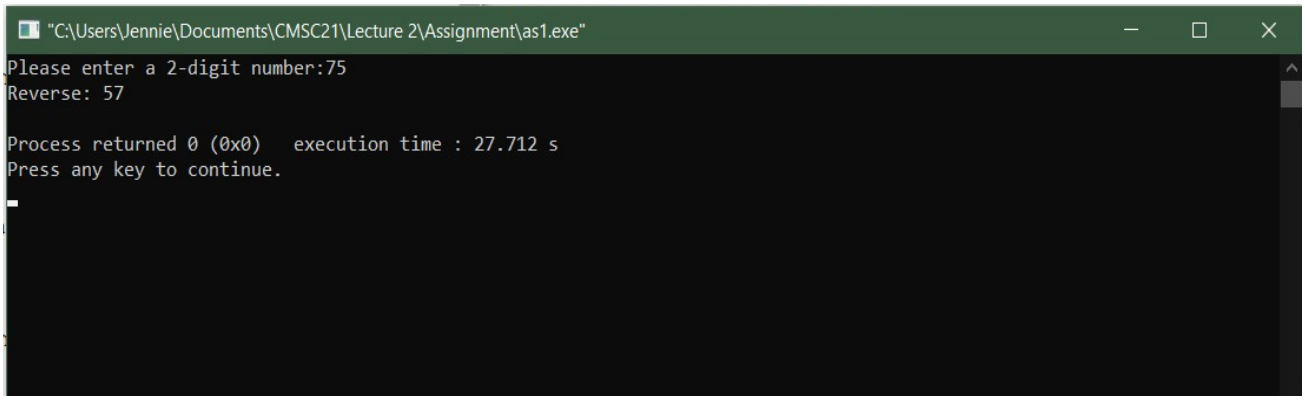
Section 1

1. A program that prompts the user to enter a two-digit number.



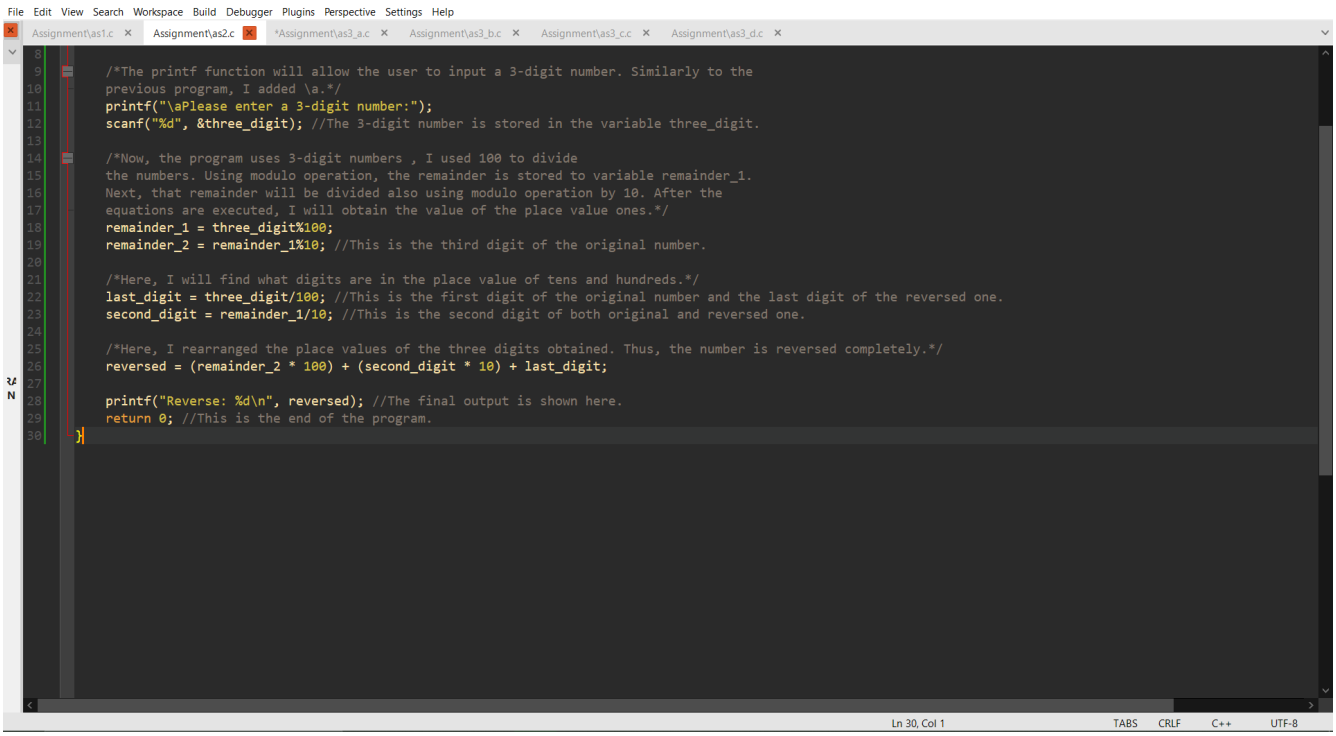
```c
//A program that reverses the digits of any 2-digit number given by the user.
#include <stdio.h>

int main(void) //This is function main.
{
    int two_digit, remainder, second_digit, reversed; //Here, I declared 4 variables as int type.

    /*The printf function will allow the user to input a 2-digit number. Also,
    I added \a to create a sound that will notify the user that the program is running.
    I found this while reading more about \n and other escape sequence. IAlthough, I am hoping
    that I'm using it correctly. */
    printf("\aPlease enter a 2-digit number:");
    scanf("%d", &two_digit); //The number inputted is stored in the first variable declared.

    /*Since this program is limited to 2-digit numbers only, I used 10 to divide
    the numbers. However, this first equation uses modulo operation, the result of this
    is a remainder. I did this to identify the first digit of the reversed
    number. It is then stored to variable remainder.*/
    remainder = two_digit % 10;
    /*Here, I used division to divide any given 2-digit number by 10.
    This is done to find out what digit is in the place value of tens.
    This will make the reverse easier.*/
    second_digit = two_digit/10;
    /*Since I need the digits to actually swap places, the remainder will take the place value of tens.
    So, I multiplied it by 10. For the second digit, there is no need to multiply because
    its place value is already in ones. Adding the two together, creates the reversed number.*/
    reversed = (remainder * 10) + second_digit;

    printf("Reverse: %d\n", reversed); //This is where the final output is displayed.
    return 0; //End of the program.
}
```

Example Output



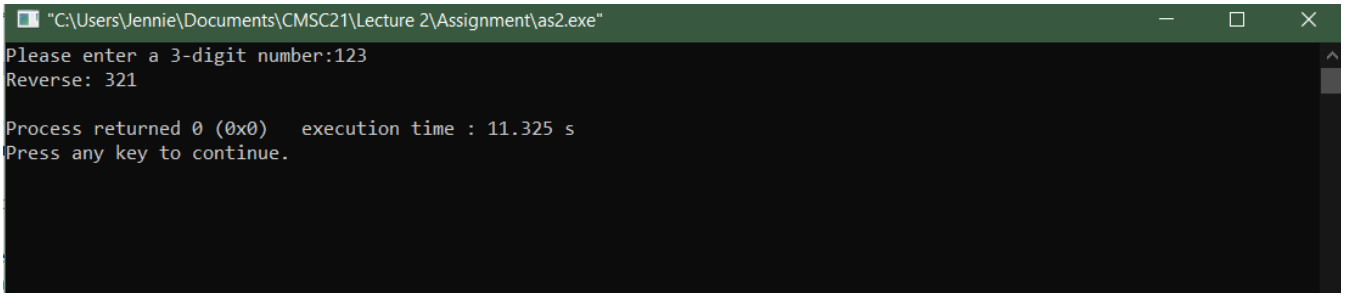
```
"C:\Users\Jennie\Documents\CMSC21\Lecture 2\Assignment\as1.exe"
Please enter a 2-digit number:75
Reverse: 57

Process returned 0 (0x0)   execution time : 27.712 s
Press any key to continue.
```

2. A program that prompts the user to enter a three-digit number.



```c
/*The printf function will allow the user to input a 3-digit number. Similarly to the
previous program, I added \a.*/
printf("\aPlease enter a 3-digit number:");
scanf("%d", &three_digit); //The 3-digit number is stored in the variable three_digit.

/*Now, the program uses 3-digit numbers , I used 100 to divide
the numbers. Using modulo operation, the remainder is stored to variable remainder_1.
Next, that remainder will be divided also using modulo operation by 10. After the
equations are executed, I will obtain the value of the place value ones.*/
remainder_1 = three_digit%100;
remainder_2 = remainder_1%10; //This is the third digit of the original number.

/*Here, I will find what digits are in the place value of tens and hundreds.*/
last_digit = three_digit/100; //This is the first digit of the original number and the last digit of the reversed one.
second_digit = remainder_1/10; //This is the second digit of both original and reversed one.

/*Here, I rearranged the place values of the three digits obtained. Thus, the number is reversed completely.*/
reversed = (remainder_2 * 100) + (second_digit * 10) + last_digit;

printf("Reverse: %d\n", reversed); //The final output is shown here.
return 0; //This is the end of the program.
}
```

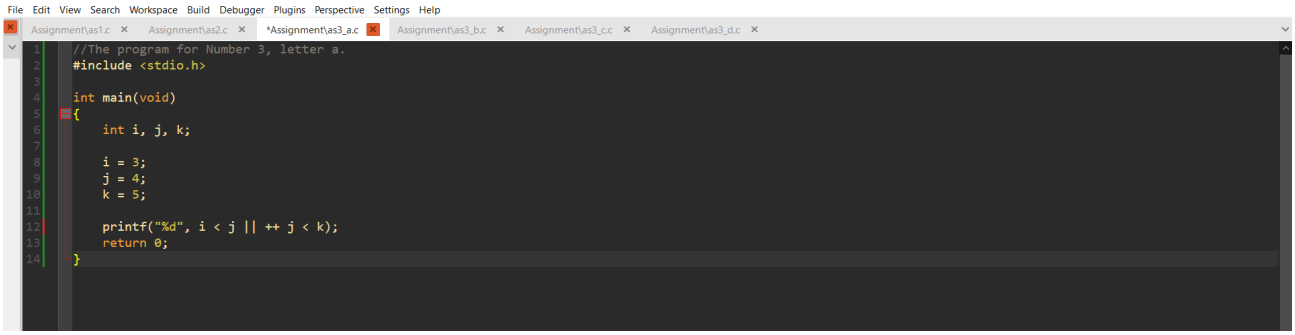
Example Output



```
"C:\Users\Jennie\Documents\CMSC21\Lecture 2\Assignment\as2.exe"
Please enter a 3-digit number:123
Reverse: 321

Process returned 0 (0x0)   execution time : 11.325 s
Press any key to continue.
```

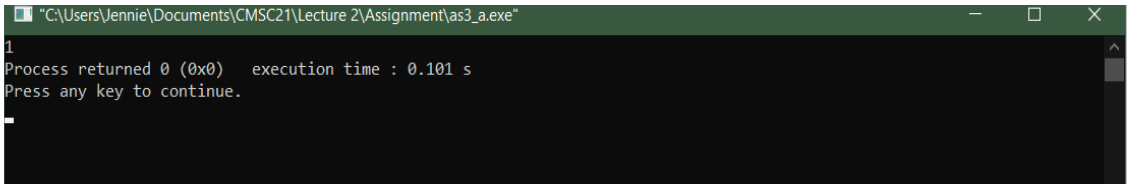
3.

a.

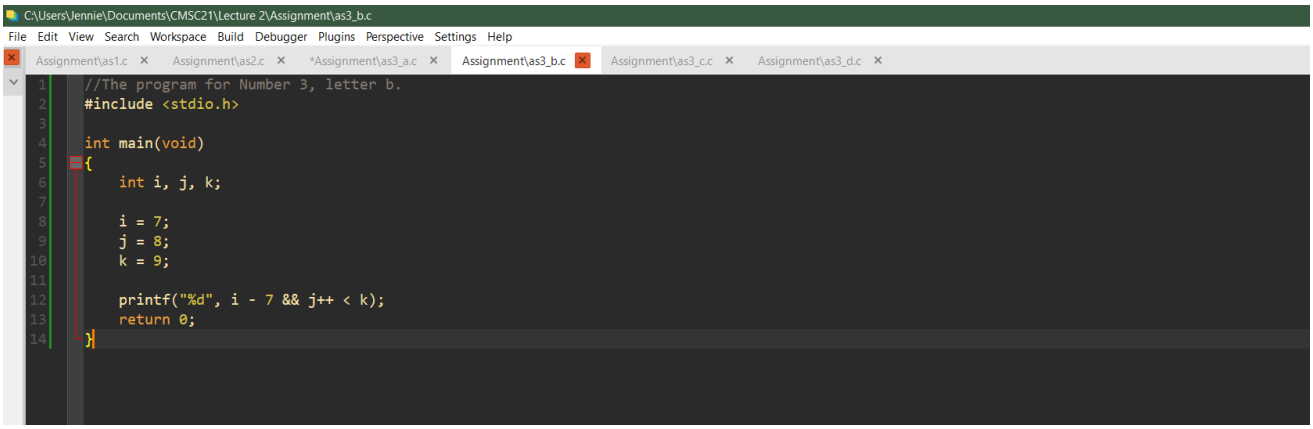


```c
//The program for Number 3, letter a.
#include <stdio.h>

int main(void)
{
    int i, j, k;

    i = 3;
    j = 4;
    k = 5;

    printf("%d", i < j || ++ j < k);
    return 0;
}
```

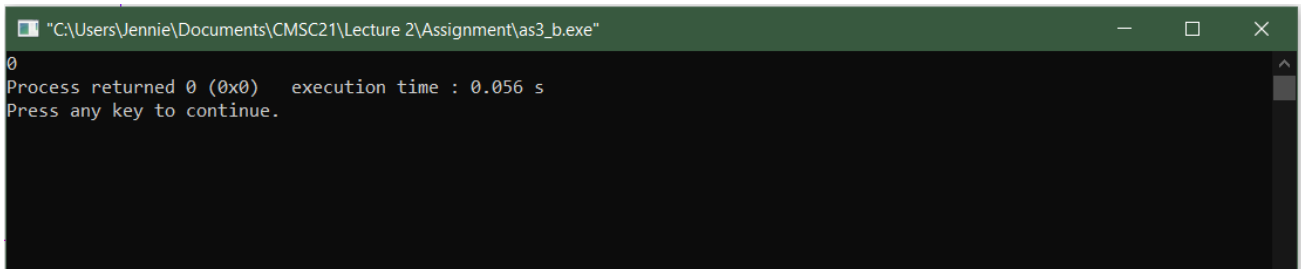
The output is 1.



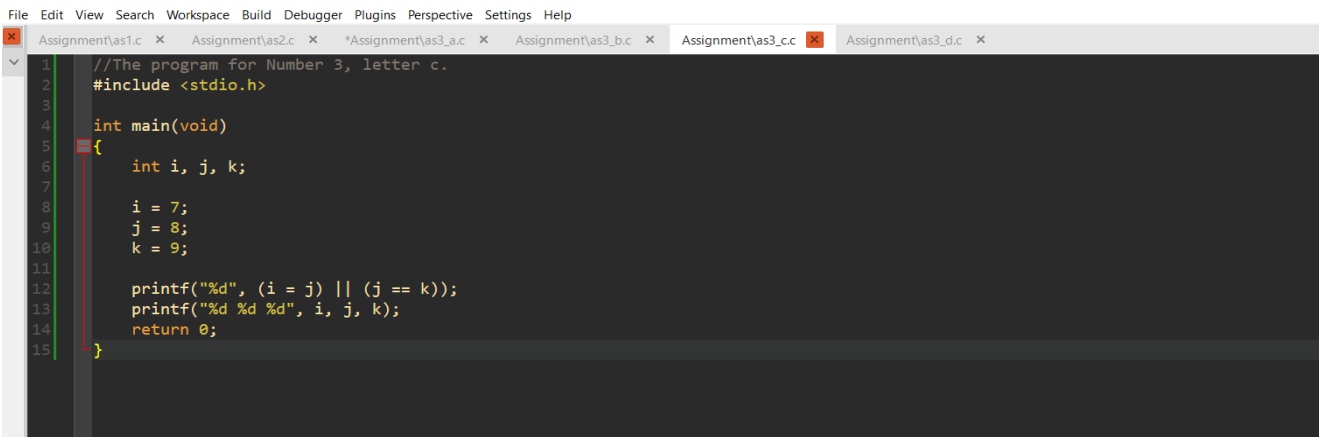
b.



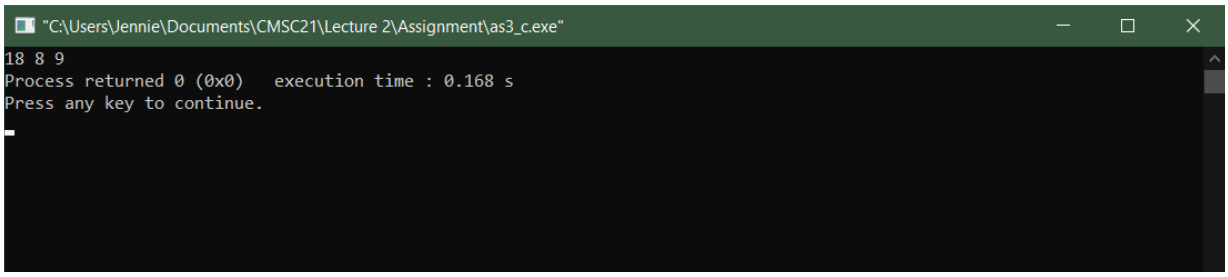
The output is 0.



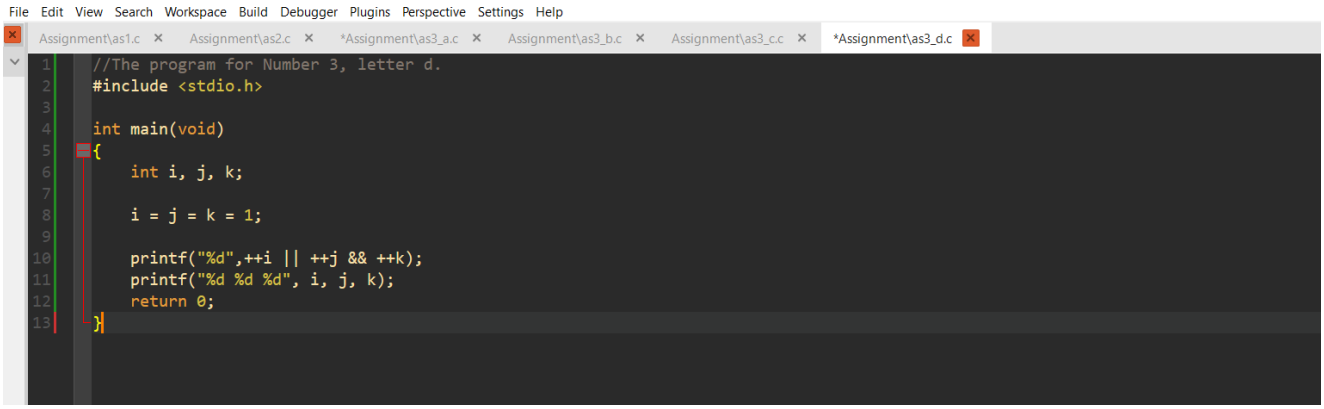
c.



The output is 18 8 9.



d.



The output is 12 1 1.