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CMSC 21 – 2
Lecture 2 Assignment

1. C Program that reverses a two-digit number

```c
#include <stdio.h> /* Include stdio.h for getting inputs
    and printing outputs properly. */

int main() // Execution of the program starts here
{
    /* Declare variables with integer type */
    int num, reversed;

    /* Prompt the user to enter a 2-digit number */
    printf("Please enter a 2-digit number: ");

    /* Read input and take two digits (truncation) from input */
    scanf("%2d", &num);

    /* Modulus division to get the first reversed digit and add it */
    reversed = reversed * 10 + num % 10;
    /* Remove current last digit from num */
    num = num / 10;

    /* Modulus division to get the second reversed digit and add it */
    reversed = reversed * 10 + num % 10;
    /* Remove last digit from num */
    num = num / 10;

    /* Display the output with the two-digits reversed */
    printf("Reverse: %2d", reversed);

    /* Indicate that the program ends here */
    return 0;
}

```

Sample output of the program above:

```
Please enter a 2-digit number: 75
Reverse: 57
```

2. C Program that reverses a three-digit number

```c
#include <stdio.h> /* Include stdio.h for getting inputs
    and printing outputs properly. */

int main() // Execution of the program starts here
{
    /* Declare variables with integer type */
    int num, reversed;

    /* Prompt the user to enter a 3-digit number */
    printf("Please enter a 3-digit number: ");

    /* Read input and take three digits (truncation) from input */
    scanf("%3d", &num);

    /* Modulus division to get the first reversed digit and add it */
    reversed = reversed * 10 + num % 10;
    /* Remove current last digit from num */
    num = num / 10;

    /* Modulus division to get the second reversed digit and add it */
    reversed = reversed * 10 + num % 10;
    /* Remove current last digit from num */
    num = num / 10;

    /* Modulus division to get the third reversed digit and add it */
    reversed = reversed * 10 + num % 10;
    /* Remove last digit from num */
    num = num / 10;

    /* Display the output with the two-digits reversed */
    printf("Reverse: %3d", reversed);

    /* Indicate that the program ends here */
    return 0;
}
```

Sample output of the program above:

```
Please enter a 3-digit number: 123
Reverse: 321
```

3. C Program that provide the output of the following codes with given int i, j, k

```c
#include <stdio.h> /* Include stdio.h for getting inputs
    and printing outputs properly. */

int main() // Execution of the program starts here
{
    /* Declare variables with integer type */
    int i, j, k;

    // a
    i = 3; j = 4; k = 5;
    printf("%d", i < j || ++j < k);
    // b
    i = 7; j = 8; k = 9;
    printf("%d",i - 7 && j++ < k);
    // c
    i = 7; j = 8; k = 9;
    printf("%d", (i = j) || (j == k));
    printf("%d %d %d", i, j, k);
    // d
    i = j = k = 1;
    printf("%d", ++i || ++j && ++k);
    printf("%d %d %d", i, j, k);

    /* Indicate that the program ends here */
    return 0;
}
```

Outputs:

a) `1`
b) `0`
c) `18 8 9`
d) `12 1 1`