C program to swap two numbers

C program to swap two numbers with and without using third variable, using pointers, functions (Call by reference) and using bit-wise XOR operator. Swapping means interchanging. If the program has two variables a and b where a = 4 and b = 5, after swapping them, a = 5, b = 4. In the first C program, we use a temporary variable to swap two numbers.

```
#include <stdio.h>
int main()
{
  int x, y, t;

  printf("Enter two integers\n");
  scanf("%d%d", &x, &y);

  printf("Before Swapping\nFirst integer = %d\nSecond integer = %d\n", x, y);

  t = x;
  x = y;
  y = t;

  printf("After Swapping\nFirst integer = %d\nSecond integer = %d\n", x, y);

  return 0;
}
```

The output of the program:

```
Enter two integers
23
45
Before Swapping
First integer = 23
Second integer = 45
After Swapping
First integer = 45
Second integer = 23
```

Swapping of two numbers without third variable

You can also swap two numbers without using third variable. In this case C program will be as follows:

```
#include <stdio.h>
int main()
{
  int a, b;

  printf("Input two integers (a & b) to swap\n");
  scanf("%d%d", &a, &b);

  a = a + b;
```

```
  b = a - b;
  a = a - b;

  printf("a = %d\nb = %d\n",a,b);
  return 0;
}
```

To understand the logic, choose the variables 'a' and 'b' as '7' and '9' respectively, and do according to the program. You can choose any other combination of numbers as well. Sometimes it's an excellent way to understand a program.