Bash Shell Script to swap two numbers

In this program, we will learn two different methods of swapping two numbers in Bash Script. The first method uses a third variable and the second method does not use a third variable.

Swap two numbers using third variable

```
firstNumber=12
secondNumber=24
echo "Before Swapping"
echo "First number: $firstNumber"
echo "Second number: $secondNumber"
temp=$firstNumber
firstNumber=$secondNumber
secondNumber=$temp
echo "After Swapping"
echo "First number: $firstNumber"
echo "Second number: $secondNumber"
```

Output of the above program

```
Before Swapping
First number: 12
Second number: 24
After Swapping
First number: 24
Second number: 12
```

Explanation of the above code-

We have taken two numbers 12 and 24 and store them in two variables- `firstNumber` and `secondNumber` respectively. The value of these variables are printed before swapping. After this, the process of swapping is started.

- The value of `firstNumber` is stored in a `temp` variable.
- Then, the value of `secondNumber` variable is assigned to `firstNumber` variable.
- And at the end, the value of `temp` variable is assigned to `secondNumber` variable.

Soon, after this, the value of variables are printed to show swapping process.

Swap two numbers without using third variable

```
firstNumber=5
secondNumber=10
echo "Before Swapping"
echo "First number: $firstNumber"
echo "Second number: $secondNumber"

firstNumber=$((firstNumber - secondNumber))
secondNumber=$((firstNumber + secondNumber))
firstNumber=$((secondNumber - firstNumber))
echo "After Swapping"
echo "First number: $firstNumber"
echo "Second number: $secondNumber"
```

Output of the above program

```
Before Swapping
First number: 5
Second number: 10
After Swapping
First number: 10
Second number: 5
```

Explanation of the above code-

Using a simple mathematics trick, we have swapped two numbers without using a third variable.

- First of all, we have subtracted `secondNumber` from `firstNumber` and stored the result in `firstNumber`.
- Then, we have added `secondNumber` to just calculated `firstNumber` to obtain the initial value of `firstNumber` variable.
- Finally, `firstNumber` is subtracted from `secondNumber` to get the initial value of `secondNumber` variable.