# MIPS Assignment 5

Branching

## Tutorial

Before attempting this assignment, navigate back to the assembly tutorial mentioned in MIPS Assignment 1.

Complete the tutorial up to Chapter 20.

## Program

Write a program that echos back any inputted integer that isn't equal to 0, and exits when a 0 is entered.

Your program should use a conditional ***branch*** when deciding whether to echo back the integer or exit the program. It should use a ***jump*** when looping back up to run the input+echo again.

(hint: A jump isn't technically needed to do this, but is still part of your assignment!)

### *Pseudo-code*

Your program should behave like the following pseudo-code:

```
1   MAINLOOP
2         X = input()
3         if X == 0 then goto EXIT
4         print X
5         print "\n"
6         goto MAINLOOP
7   EXIT
8         exit()
```

Note the following:

- It is expected that the ***goto*** statement on line 3 is either comparison instruction followed by a branching instruction, or just a conditional branching instruction.
- It is expected that the ***goto*** statement on line 6 is a conditionless jump instruction.

### *The Input*

As with previous assignments, each integer will be entered on a single line.

## *The Output*

Your program will take an integer from standard input, and use it to decide the next course of action:

- If a 0 was inputted, your program will exit immediately.
- If any other integer was inputted, your program will print that integer back out to standard output, then loop back up to get another integer.

Take, for example, the following input sequence:

```
3
8
-3
4
0
```

A correct program would output the following:

```
3
8
-3
4
```

## *Assignment Tag*

For this assignment, use the following *Assignment tag*: *Mips5Branching*