
Notes:

- The main purpose of this session is to get familiar with conditional branch and unconditional jump instructions.
- Students are also expected to call procedures in this lab sessions.
- **Students are required to submit your answers to the BKeL system in two weeks.**
- To submit, please make a zip file that contains all sources for these questions below, each question should be answered in one source file.

Question 1. Write a MIPS program with the following requirements:

1. Declare an string and its length in memory, for example: "Ho Chi Minh City - University of Technology", length = 42
2. Print the string in a reverse order to the terminal, ie. "ygolonhceT fo ytisrevinU - ytiC hniM ihC oH"

Question 2. Write a MIPS program that request a positive integer number, call n, from users (please check if it's positive or not). The program then prints n first elements of the Fibonacci Sequence.

Question 3. Write a MIPS program with the following requirements:

1. Declare an integer array with 10 data elements;
2. Request data elements from users and store into the array;
3. Sort the elements of the array in the descending order;
4. Print the results to the terminal.

Question 4. In this exercise, students are required to write a recursive program although the problem can be solved by iterations.
Write a MIPS program that calculates the sum of all 10 elements in an integer array with synthetic data. Bellow is pseudo code of the recursive version:

```
int sum(int *v, int k){
 if (k == 1) return v[0];
 return v[0] + sum(&v[1], k-1);
}
```

Question 5. Taking the same requirements in Question 4. Write a MIPS program that is able to find the maximum elements in an array. Bellow is pseudo code of the recursive version:

```
int max(int *v, int k){
 if (k == 1) return v[0];
 int temp = max(&v[1], k - 1);
 if (v[0] >= temp) return v[0];
 else return temp;
}
```

———————the end———————