Ho Chi Minh City University of Technology
Faculty of Computer Science and Engineering

**Computer Architecture**

Practical session - Week 3 - Spring Semester 2021

---

**Notes:**

- The main purpose of this week is to practice the conditional branch and unconditional jump instructions
- All the exercises in this document deal with integer numbers that are stored in 4-byte words.
- **Students are requested to submit the MIPS programs to the elearning no later than Monday,April-19, 2021**

---

**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 ASCII code of this string to the terminal
3. Print the string in a reverse order to the terminal, ie. "ygolonhceT fo ytisrevinU - ytiC hniM ihC oH"

**Question 2.** Write a MIPS program with the following steps:

1. Request an integer number from users.
2. If the number is positive, repeat step 1. Otherwise, print sum of all integer numbers that the program has read from users.

**Question 3.** Implement the following C code by using MIPS code. Assume that b and c are 10 and 5, respectively while input variable is read from keyboard. Print value of a to the terminal.

```
switch (input){
 case 0: a = b + c; break;
 case 1: a = b - c; break;
 case 2: a = c -b; break;
 default: printf{"please input an another integer numbers\n"}; break;
}
```

**Question 4.** Write a MIPS program with the following requirements:

1. Declare an integer array with 10 synthetic data elements.
2. Read an integer number from users.
3. Find in the array if the integer read from user exists in the array or not. Print the position of the integer number in the array if found; otherwise tell users that the number does not exist in the array.

——————the end——————