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

Computer Architecture

Practical session - Week 8 Spring Semester 2018

Notes:

- The main purpose of this week is to continually practice non-leaf/recursive procedures call.
- This is the last week we work will MIPS programming.
- Students are requested to submit the MIPS programs no later than 16-December-2018.

Question 1. In this exercise, students are required to write a recursive program although the problem can be solved by iterations.
Write a MIPS program that calculate the sum of all 10 elements in an integer array. Bellow is pseudo code using recursive:

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

Question 2. Taking the same requirement in the previous exercise. Write a MIPS program that is able to find the maximum elements in an array. Bellow is pseudo code using recursive:

```
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——————