**COMP3315 Lab3: MIPS Branches and Loops**

24/10/2023

**Number and Name:**

1. **Object**: MIPS Branch and Loop examples using arrays
2. **Procedure**:

Write and run a MIPS algorithm that has an 9 positive integer element array at the data segment and the code finds the second largest element of the array using a loop and prints it. Write the C code first,then convert it to MIPS code and output in box below. Upload your “.docx” file with “.asm” file to submission area.

#include <stdio.h>

int main() {

int arr[] = {12, 5, 9, 22, 15, 8, 10, 18, 30};

int n = 9;

int firstMax = arr[0];

int secondMax = arr[0];

for (int i = 1; i < n; i++) {

if (arr[i] > firstMax) {

secondMax = firstMax;

firstMax = arr[i];

} else if (arr[i] > secondMax && arr[i] != firstMax) {

secondMax = arr[i];

}

}

printf("The second largest elements: %d\n", secondMax);

return 0;

}