Computer Architecture

Practical session - Week 5 - Fall Semester 2019

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 1-Dec-2019.

Question 1. 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 2. 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 3. 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.

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