At "M – Tutorial Mid Term 1 - Submitted Work Submission"

Assignment Date: September 2018
Submission Date: November 29, 2018
Deadline: 23:59

- Submit in pairs to the submission account of the course and electronically.
- Late submissions, etc., must be sent to cs234118@gmail.com.
- Submissions at the last minute of the deadline must be made.

Complete the following:

- Copy the program to a text file and name it ex1.s11.
- Use the assembler to translate the above file into machine language.
- Run the simulator to execute the program ex1.o11 created by the assembler.

Submission:
- Send the file ex1.s11, but do not enclose it in a Zip file as instructed on the website.

Program:

```assembly
main:  mov  lngth, r0  ;Initialize registers
       br cont

main2: mov  lngth + 2, r0 ;Initialize registers
       br cont

cont:   mov #arr1, r1
        mov #arr2, r2
        mov #sum, r3
        mov #diff, r4

loop:   mov (r1), (r3)             ;Read element from arr1
        add (r2), (r3)+            ;Read element from arr2 and compute result into sum
        mov (r1)+, (r4)           ;Read element from arr1
        sub (r2)+, (r4)+          ;Read element from arr2 and compute result into diff
        sob r0, loop                ;Go to next iteration

halt

lngh:   .word    6, 4
arr1:    .word    22, 11, 16., 14, 11, 200
arr2:    .word    2, 11, 20, 12, 7, 208
sum:     .blkw    6
diff:     .blkw    6

. = torg + 2000
halt
```

Assignment 2:

Requirements for the program:

- **ex1.s11**
- refer to the comments on the website.
- The program should be compiled and run on the simulator.
- The program should be submitted on the website.
- The program should be named ex1.s11.
- The program should be submitted electronically.

Submission:
- Submit the file ex1.s11 Zip
- Submit the file ex1.s11

Exclusions:
- Do not submit the program itself.
While writing the content of the arrays sum and diff, separated by commas, after running the program in the following cases:

1. Run the program using the command:
```
c: sum: ____________ ____________ diff: ____________ ____________
```

2. Run the program using the command:
```
g main2: sum: ____________ ____________ diff: ____________ ____________
```

3. Run the program using the command:
```
g main: sum: ____________ ____________ diff: ____________ ____________
```

Part C:

List the changes in the program above. For each change, check whether it causes an error and write whether:

a. The error will be discovered during translation.
   - Run the additional error in the file lst.

b. The error will be discovered during execution.

c. No error will be discovered, but the program will change its execution in relation to the original program.

b. There is no change to the execution of the program. This applies to each change separately (independent of the other changes).

1. Modify and keep the line "main:" all together, the line mov length, r0 (without the line mov r1, r0) (without the line mov inc r1)

2. Modify and keep the line "main: mov (r1),(r3)" all together, the line mov: mov (r1),(r3)

3. Modify the number 22 in the array arr1

4. Modify the line mov length, r0

   Notice: Be careful when modifying the code at the beginning. In the lst, "11" is replaced with the modified line.

Part D:

What is the value of the register pc (program counter) immediately after loading the program into the simulator, when:

1. Load the original program:

   Answer:

2. Modify and keep the line "main: mov length, r0" all together, the line mov: mov length, r0

   Answer:
הגשת עבודה לוח תקדים:

- הדפיסו את הלוחה ב, ג ד ו-ד ומלאו את השורות המתאימות

- יש להדפיס את דף השער הנמצא באתר הקורס ולהדוקו לדפים שאתם מגישים בהצלחה

בלטדהם