ASSIGNMENT 1 (20 marks)

Assignment Due Date: October 18, 2022

Due Date: November 6 (Sunday), 2022 (kindly submit your assignment via the "Assignment 1 – Submission" link of our online course Moodle system) – at or before 23:55

Questions:

(a) Consider the following instruction sequence (RAW hazard through **memory**):

```
sw $5, 10($8) // store word from register $5
lw $3, 10($8)  // load word to register $3
lw $4, 10($8) // load word to register $4
```

Does this require forwarding hardware *for maximum performance*? If yes, draw/describe the forwarding hardware and describe the control circuitry. If not, explain why not.

(10 marks)

ANSWER:

(b) Consider the following instruction sequence (RAW hazard through **registers**):

```
lw $7, 12($6)
sw $7, 22($5)
sw $6, 28($4)
```

Does this require forwarding hardware *for maximum performance*? If yes, draw/describe the forwarding hardware and describe the control circuitry. If no, explain why not.

(10 marks)

ANSWER:

-END of Assignment 1-