

# UG Exam Performance Feedback

## First Year

### 2019/2020 Semester 1

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COMP15111 Fundamentals of Computer Architecture

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**Comments** Collectively the cohort performed exceptionally well during the exam showcasing that students revised properly and have assimilated the taught material during the first semester. Below are some comments regarding common mistakes found in their answers:

- Few students struggled to differentiate between pre-index and base+offset addressing modes as they mixed these two addressing modes. Although most of the students successfully translated the python code to its equivalent ARM assembly code, many students failed to translate the “y=10” assignment operation to its comparable assembly store instruction.
  - A common misconception is that a stack can be only accessed via push/pop operations; which is not true. A stack does not differ significantly from any other memory location, meaning that we can potentially issue a store or a load instruction in the middle of it (e.g. `ld R0,[SP+128]`). Where the stack differs is about the model in which developers (and assemblers) handle the data structure. The push/pop pseudo-instructions ensure that we have a consistent view of the stack when we manipulate it. Nevertheless, no exception will be raised if someone attempts to corrupt the stack. Please note that no points have been deducted from this.
  - Some students have been calling PUSH/POP instructions while in fact they are pseudo-instruction
  - For the last question, the accumulator architecture does not have any accessible registers for the developers to use, while in the register-memory architecture the two source operands of the instruction can be a register and a memory location (not two registers or two memory locations).
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