

COMP3710: Special Topics in Computer Science  
Computer Microarchitecture

<https://cs.anu.edu.au/courses/comp3710-uarch/>

Shoaib Akram  
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Preliminary Quiz

**Instructor:** Shoaib Akram, email: [shoaib.akram@anu.edu](mailto:shoaib.akram@anu.edu), office: N319, CSIT

**Note to Student:** Please answer as many questions below as you can without using a search engine or any textbook. Note your answers in plain text and email the instructor (see the email address above). Alternatively, please use the word document on the handouts section of the course website.

***Submitting this quiz is optional.***

**Goal of the Quiz:** We want to determine where our students stand in terms of background knowledge appropriate to this course. The outcome of the quiz will steer the lecture material we introduce during the first three weeks.

**Question 1:** List three popular instruction set architectures in use today.

**Question 2:** List the three main *classes* of instructions common to most instruction sets.

**Question 3:** What is the defining feature of a load-store architecture? What is a popular alternative to the load-store architecture?

**Question 4:** Briefly explain the functionality of these digital building blocks: (1) Multiplexer, (2) Decoder, and (3) Register.

**Question 5:** List the different levels in the memory hierarchy of a typical computer system.

**Question 6:** In the study of memory systems, what is the meaning of the locality of reference?

**Question 7:** Briefly explain the difference between volatile and non-volatile memory/storage? Which one is non-volatile: DRAM or SSD?

**Question 8:** What is IPC (or conversely, CPI), and what is its use in computer architecture?