

# Computer Systems

## Week 7

The ability to use several chips that we have already made in this unit to implement the Hack computer is the most significant thing I learnt in Week 7. This includes being aware of how instructions are executed by the PC, ALU, and registers working together. This connects to my prior knowledge of computer design since I've studied the many parts of a computer and how they cooperate to carry out commands. But this week's courses gave us a better grasp of how these parts work together and how the Hack computer fits into the bigger picture.

The course staff, in my opinion, wants me to learn this since it's critical to comprehending the fundamentals of computer operation. I may better appreciate the difficulties and intricacies involved in creating and constructing a real computer by comprehending how the Hack computer was implemented. Furthermore, these details will come in handy for next computer architecture and design classes.

## Week 8

How the Von Neumann architecture functions and is applied in the Hack computer is the most significant thing I learnt in Week 8. Additionally, I studied the von Neumann bottleneck and a few possible fixes.

This connects to my prior knowledge of computer design since I've studied the many parts of a computer and how they cooperate to carry out commands. The lectures this week, however, gave us a better grasp of how these parts work together and how an actual computer functions.

The course staff, in my opinion, wants me to learn this since it's critical to comprehending the fundamentals of computer operation. I may better appreciate the difficulties and intricacies involved in creating and constructing a real computer by comprehending how the Hack computer was implemented. Furthermore, these details will come in handy for next computer architecture and design classes.

## Week 9

The ability to use the CPU, RAM, and ROM chips to create the Hack computer was the most crucial lesson I learned in Week 9. I also gained knowledge about the many parts of the Hack computer and how they cooperate to carry out commands.

This connects to my prior knowledge of computer design since I've studied the many parts of a computer and how they cooperate to carry out commands. But the courses this week gave us a deeper knowledge of how a computer is implemented with discrete logic gates.

The course staff, in my opinion, wants me to learn this since it's critical to comprehending the fundamentals of computer operation. I can better appreciate the difficulties in developing and creating a computer as well as the intricacy of computer architecture by comprehending how the Hack computer was implemented. Furthermore, these details will come in handy for next computer architecture and design classes.

## Week 10

The way the Hack computer's assembler converts assembly language instructions into machine code is the most significant thing I learned in Week 10. This entails handling symbols, dividing the assembly instructions into several fields, and turning the fields into binary code.

This connects to my prior knowledge of computer design since I've studied the many parts of a computer and how they cooperate to carry out commands. The lectures this week, however, gave us a deeper comprehension of the assembly procedure and the assembler's function in translating high-level instructions into machine code.

I think this is something the course team wants me to know because it's crucial to comprehending how computers carry out software. I can better appreciate the difficulties involved in developing and creating a computer, as well as the intricacy of computer architecture, by comprehending the assembly process. Furthermore, these details will come in handy for next computer architecture and design classes.