Unit 00_000 – First Assembly Program

Video Length 33:00

1. What symbols are used to mark a multi-line comment in the 'as' assembler?

2. What is the name of the section of the program that holds items that look like variables? (Hint: it starts with a period.)

3. What is the name of the section of the program that holds the executable code? (Hint: it also starts with a period.)

4. What symbol is used to indicate that the remainder of the line is a comment?

5. The last three lines of the program do not have comment. Write reasonable comments for each of the lines.

```
movq $60, %rax

movq sum, %rdi

syscall
```

Unit 00_010 – About Assembly

Video Length 8:27

6. Is the main purpose of this course to teach you how to write programs in Assembly Language? Explain your answer.

Unit 00_015 – A Bit of History

Video Length 20:30

8. How many bits of data were needed to represent a single decimal digit using the methods used to tablulate the US census inn 1890? Explain why it took that many bits.

9. How many bits are needed to repressnt a single decimal diit using Binary Coded Decimal (BCD)

10. Why was BCD inefficient?

11. What is the relationship between an electrical relay switch and a bit?

12. Relays were replaced by _____ tubes which were in turn replaced by _____. Later, many transistors and other electrical components were printed on single pieces of silicone to create _____ circuits

13. How is the speed of computers related to the physical size of the CPU?

14. What is a microprocessor?

Unit 00_020 – Computer Systems

Video Length 12:53

15. Who is generally credited with designing the basic architecture of modern computer systems?

16. What are the three main components of the CPU of a CPU?

    1. _____ 2. _____ 3. _____

17. What are registers? (You do not need to list specific registers)

18. What type of arithmetic is used by the ALU?

19. What two things are kept in Main Memory or Primary Storage?

20. What unpopular opinion makes VonNeuman a controversial figure?

21. Does a CPU need to be on a single chip of silicone?

22. In old movies and TV shows, CPUs had lots of blinking lights. What did the blinking lights represent?

23. What is a bus?

Unit 00_030 – Computer architecture

Video Length 8:13

24. In general terms, what does "Computer Architecture" mean?

25. What is the specific computer architecture we will be studying this semester? ar

26. How wide were the registers on 8086 processors

27. How wide are the registers on 80386 processors? (Oops, I did not say 80386 in the video, so I will answer this one for you.)
    ## 32 bits

28. How wide are the registers on x86-64 processors? (Yes, it is obvious)

29. How are ARM processors different from x86 processors?

30. What is "Instruction Set Architecture? Do all CPUs share the same ISA?

_____

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Please write any lingering questions you have here.