A Bus is a collection of wires that connects several devices.

Buses are used to send control signals and data between the processor and other components

This is to achieve a reasonable speed of operation.

In computer system all the peripherals are connected to microprocessor through Bus.

Types of Bus structure:

1. Address bus
2. Data bus
3. Control bus

1. Address Bus:

1. Address bus carry the memory address while reading from writing into memory.
2. Address bus caary I/O post address or device address from I/O port.
3. In uni-directional address bu only the CPU could send address and other units could not address the microprocessor.
4. Now a days computers are haing bi-directional address bus.

2. Data Bus:

1. Data bus carry the data.
2. Data bus is a bidirectional bus.
3. Data bus fetch the instructions from memory.
4. Data bus used to store the result of an instruction into memory.
5. Data bus carry commands to an I/O device controller or port.
6. Data bus carry data from a device controller or port.
7. Data bus issue data to a device controller or port.

3. Control Bus:

Different types of control signals are used in a bus:

1. Memory Read: This signal, is issued by the CPU or DMA controller when performing a read operation with the memory.
2. MemoryWrite: This signal isissued by the CPU or DMAcontroller when performing a write operation with the memory.
3. I/O Read: This signal isissued by the CPU when it is reading from an input port.
4. I/O Write: This signal is issued by the CPU when writing into an output port.
5. Ready: The ready is an input signal to the CPU generated in order to synchronize the show memory or I/O ports with the fast CPU.

A system bus is a single computer bus that connects the major components of a computer system, combining the functions of a data bus to carry information, an address bus to determine where it should be sent, and a control bus to determine its operation.

Q1. Is USB a bus?

Ans. A USB is a fast serial bus, which connect an electronic device to a computer. It is mostly used on personal computers. USB is used with mobile phones, video games, etc.

Related posts:

1. Structure of Desktop computers
2. Logic Gates
3. Register Organization
4. Addressing modes
5. Register Transfer Language
6. Numerical problem on Direct mapping
7. Registers in Assembly Language Programming
8. Array in Assembly Language Programming
9. Net 31
10. How to start with GNU Simulator 8085
11. Cache Updating Scheme
12. Cache Memory
13. Principle of Cache Memory
14. Cache Mapping
15. Addition and subtraction in fixed point numbers
16. PCI Bus
17. Booths Algorithm
18. Write a short note on design of arithmetic unit ?
19. Write a short note on Array processors ?
20. Write a short note on LRU algorithm ?
21. What is the format of Micro Instruction in Computer Architecture explain ?
22. What is the layout of pipelined instruction in Computer Architecture ?

23. Explain the following interfaces in Detail:PCI Bus, SCSI Bus, USB Bus

24. What is Memory Organization ? Discuss different types of Memory Organization in Computer System.

25. Computer Organization Q and A

26. Write short note on improving cache performance methods in detail ?

27. What is Multiprocessor ? Explain inter process communication in detail ?

28. Briefly explain the concept of pipelining in detail ?

29. Discuss the following in detail: RISC architecture, Vector processing ?

30. Define the instruction format ? Explain I/O System in detail ?

31. Explain the design of arithmetic and logic unit by taking on example ?

32. Explain how addition and subtraction are performed in fixed point number ?

33. Explain different modes of data transfer between the central computer and I/O device ?

34. Differentiate between Serial and parallel data transfer ?

35. Explain signed magnitude, signed l's complement and signed 2's complement representation of numbers. Find the range of numbers in all three representations for 8 bit register.

36. If cache access time is lOOns, main memory access time is 1000 ns and the hit ratio is 0.9. Find the average access time and also define hit ratio.

37. Explain hardwired microprogrammed control unit ? What is address sequencer circuit ?

38. Explain how a stack organized computer executes instructions? What is Stack?

39. Draw and explain the memory hierarchy in a digital computer. What are advantages of cache memory over main memory?

40. What is Associative memory? Explain the concept of address space and memory space in Virtual memory.

41. What is Paging? Explain how paging can be implemented in CPU to access virtual memory.

42. Explain SIMD array processor along with its architectural diagram ?

43. Write short notes on

44. Draw the functional and structural views of a computer system and explain in detail ?

45. Explain general register organization.

46. Compare and contrast DMA and I/O processors ?

47. Define the following: a) Flynn's taxonomy b) Replacement algorithm

48. Explain the various pipeline vector processing methods ?

49. Describe the language features for parallelism ?

50. What are different addressing modes? Explain them.

51. Explain any page replacement algorithm with the help of example ?

52. What is mapping? Name all the types of cache mapping and explain anyone in detail.

53. Explain arithmetic pipeline ?

54. Write short notes on, a) SIMD, b) Matrix multiplication c) Instruction format

55. Differentiate: a) Maskable and non-maskable interrupt b) RISC and CISC

56. Computer Organization Previous Years Solved Questions

57. Booths algorithm to muliyiply +5 and -15