Mindluster Platform

About the course Operational concepts in computer architecture

Operational concepts in computer architecture course, in this course we will learn about the operational concepts in computer architecture. This course provides a comprehensive understanding of how computer systems execute instructions and manage data. We will explore the Instruction Set Architecture (ISA), which defines the commands a CPU can execute, and delve into CPU design and functionality. The course covers the design of data paths and control paths, essential for executing instructions efficiently. We will study microarchitecture and pipelining, techniques that improve CPU performance by overlapping instruction execution stages. Memory hierarchy and cache design are crucial topics, explaining how data is stored and accessed quickly. Instruction fetch and decode processes will be examined, alongside the operations of the Arithmetic and Logic Unit (ALU) and control unit. Register Transfer Level (RTL) operations, load and store mechanisms, and branch prediction strategies will also be covered. We will discuss parallel processing, concurrency, superscalar, and out-of-order execution, highlighting advanced performance optimization techniques. Additionally, the course addresses multiprocessing, multithreading, input/output operations, peripheral management, interrupt handling, exception processing, power management, and energy efficiency.

Computer Science Category's Courses

Course Lesson(57)

Lesson 1 : **What is Computer Architecture COA class 1 in Telugu Rajeswari**

Lesson 2 : **Computer Architecture vs Computer Organization COA class 2 in Telugu âœ“Rajeswari**

Lesson 3 :
Functional units of Digital system in Computer Architecture COA class 3 in Telugu âœ“ Rajeswari

Lesson 4 :
Basic Operational concepts in computer Architecture COA class 4 in Telugu âœ“ Rajeswari

Lesson 5 :
General system Architecture in computer architecture COA class 5 in Telugu âœ“ Rajeswari

Lesson 6 :
Von Neumann model in general purpose architecture COA class 6 in Telugu âœ“ Rajeswari

Lesson 7 : **Bus structure in Computer Architecture COA class 7 in Telugu âœ“Rajeswari**

Lesson 8 : **Single Bus structure and Double Bus structure COA class 8 in Telugu âœ“ Rajeswari**

Lesson 9 : **General purpose system COA class 9 in Telugu âœ“ Rajeswari**

Lesson 10 : **Parallel processing in Computer Architecture COA class 10 in Telugu**

Lesson 11 : **FLYNN S classification of computers COA class 11 in Telugu**

Lesson 12 : **Computer Registers in Computer Architecture COA class 12 in Telugu**

Lesson 13 : **Computer Instructions in computer Architecture COA class 13 in Telugu**

Lesson 14 :
Design of control unit Hardwired control in computer Architecture COA class 14 in Telugu

Lesson 15 :
Microprogrammed control in design of control unit COA class 15 in Telugu âœ“ Rajeswari

Lesson 16 : **Instruction cycle in computer Architecture COA class in Telugu**

Lesson 17 : **Input Output configuration in computer Architecture COA class in Telugu**

Lesson 18 : **Logic Gates AND OR NOT gates Rajeswari**

Lesson 19 : **NAND and NOR Gates in Computer Architecture Rajeswari**

Lesson 20 : **XOR and Exclusive NOR in Computer Architecture Rajeswari**

Lesson 21 : **Boolean Algebra introduction solving Boolean Algebra expressions in COA Rajeswari**

Lesson 22 : **Laws of Boolean Algebra Solving expressions with gates Rajeswari**

Lesson 23 : **kaurnaugh map K map 2 variable 3 variable methods in COA Rajeswari**

Lesson 24 : **K map 4 variable example kaurnaugh map Rajeswari**

Lesson 25 : **De Morgan s Theorem in computer Architecture Rajeswari**

Lesson 26 : **Product of Sums POS and sum of products SOP Rajeswari**

Lesson 27 : **Combinational circuits Half Adder Full Adder Rajeswari**

Lesson 28 : **Multi bit Adder Combinational circuits Computer organization in Telugu**

Lesson 29 : **Multiplexer with combinational Circuits COA tutorials in Telugu**

Lesson 30 : **Demultiplexer in Digital Electronics COA in Telugu**

Lesson 31 : **Sequential Circuit introduction COA in Telugu**

Lesson 32 : **Differences between Combinational Circuit and Sequential Circuit COA in Telugu**

Lesson 33 : **Latch and Flip Flop introduction Computer Architecture in Telugu**

Lesson 34 : **Difference between Latch and Flip Flop Computer Architecture in Telugu**

Lesson 35 : **SR Latch using NAND gate Latches COA in Telugu**

Lesson 36 : **SR Latch with NOR Gate Latches COA in Telugu**

Lesson 37 : **SR Flip Flop truth table Flip Flops COA in Telugu**

Lesson 38 : **SR Flip Flop NOR Gate Flip Flops COA in Telugu**

Lesson 39 : **D Flip Flop truth table and Circuit diagram COA in Telugu**

Lesson 40 : **JK Flip Flop introduction truth table k map COA in Telugu**

Lesson 41 : **T Flip Flop introduction Truth Table Diagram COA in Telugu**

Lesson 42 : **Types of Triggering in Digital electronics COA in Telugu**

Lesson 43 : **Master Slave jk flip flop introduction with example COA in Telugu**

Lesson 44 : **Convert SR to D Flip Flop Truth Table COA in Telugu**

Lesson 45 : **Convert SR Flip Flop to JK Flip Flop Truth Table k map COA in Telugu**

Lesson 46 : **Convert T flip flops to JK introduction truth table COA in Telugu**

Lesson 47 :
Counter introduction Synchronous and Asynchronous counters Digital Electronics in Telugu

Lesson 48 : **Up and Down Counters Digital Electronics in Telugu**

Lesson 49 : **Ring Counters Digital Electronics in Telugu**

Lesson 50 : **Johnson Counter in Counters Computer Networks in Telugu**

Lesson 51 : **Shift Registers in Digital Electronics COA in Telugu**

Lesson 52 : **Serial In Serial Output Shift Registers Digital Electronics in Telugu**

Lesson 53 : **Serial In and Parallel Output Shift Registers Digital Electronics in Telugu**

Lesson 54 : **Parallel In and Serial Output Shift Registers Digital Electronics in Telugu**

Lesson 55 : **Parallel In and Parallel Output Shift Registers Digital Electronics in Telugu**

Lesson 56 : **Bidirectional Shift Registers Digital Electronics in Telugu**

Lesson 57 : **Universal Shift Registers in Digital Electronics Digital Electronics in Telugu**

Related courses

Linear Algebra for Computer Scientists

Insertion Sort

Bubble Sort

GCSE Computer Science

Random Access Memory

Binary Trees

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