



Dr. SNS RAJALAKSHMI COLLEGE OF ARTS & SCIENCE (Autonomous)

Coimbatore -641049



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Affiliated to Bharathiar University, Coimbatore)

DEPARTMENT OF GRAPHIC & CREATIVE DESIGN AND DATA ANALYTICS

**COURSE NAME : COMPUTER SYSTEM ARCHITECTURE
(23UCU402)**

I YEAR /I SEMESTER

Unit II- LOGICAL GATES

Topic 1: Digital Computers

Classification of Computers

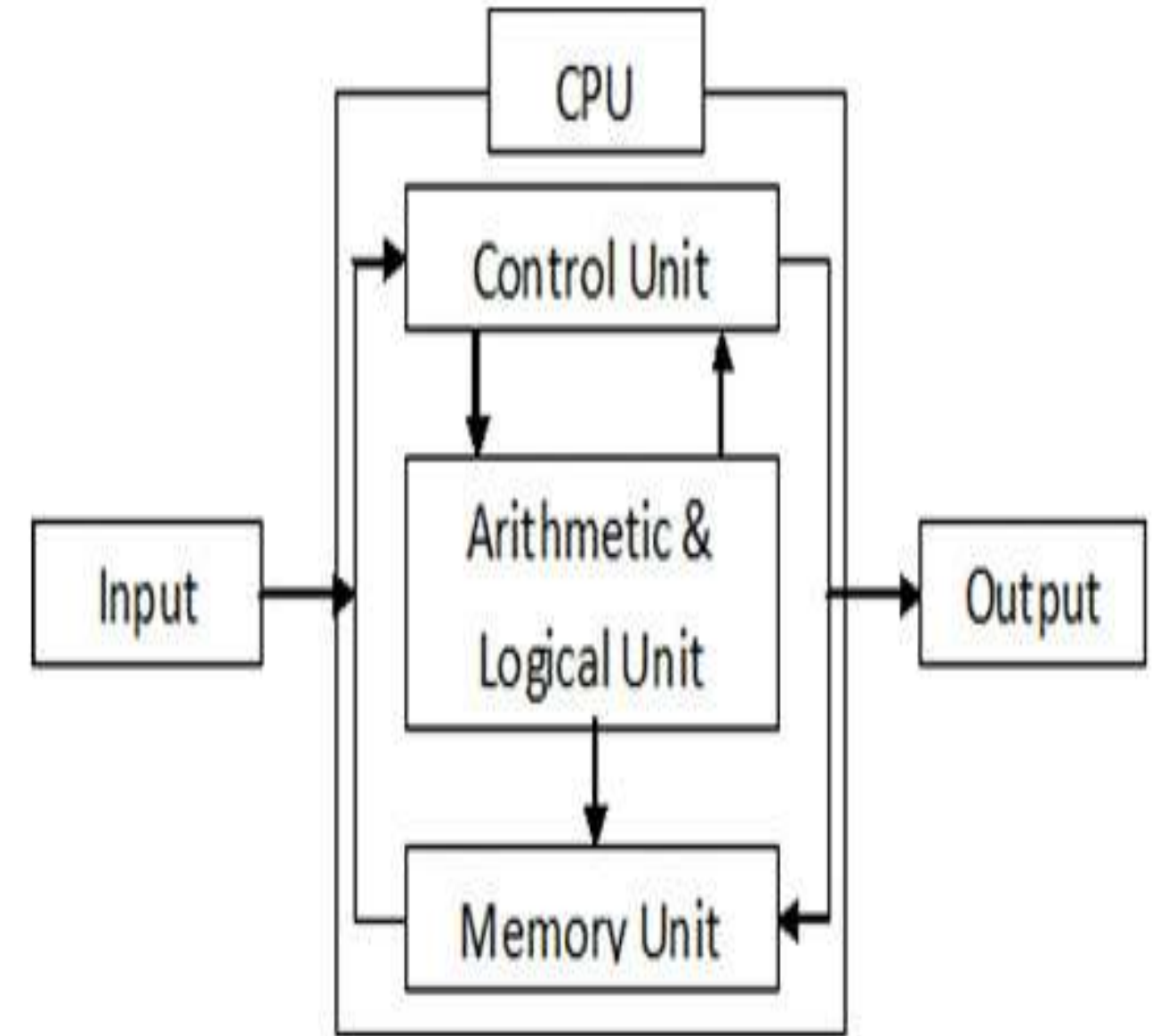


Digital Computers

- ✓ **Digital computer**, any of a class of devices capable of solving problems by processing information in discrete form.
- ✓ It operates on data, including magnitudes, letters, and symbols, that are expressed in binary code—i.e., using only the two digits 0 and 1.

✓ A digital computer system has four basic functional elements:

- (1) input-output equipment
- (2) Main memory
- (3) Control unit
- (4) Arithmetic-logic unit.



Digital Computers

**ANALOG
COMPUTER**

Vs

**DIGITAL
COMPUTER**



Elements

<u>Analog</u>	<u>Digital</u>
Analog computer works with continuous values.	Digital computers works with discrete value (0,1). It can work only with digits
It has very limited memory.	It can store large amount of data.
It has no state.	It has two states on and off
Its speed of calculation is slow	<i>Its speed of calculation is very high.</i>
It is difficult to use	<i>It is easy to use.</i>
Analog computers is used in engineering and scientific applications.	<i>Digital computer is widely used in almost all fields of life.</i>
Analog computer is used for calculations and measurement of physical quantities such as weight, height, temperature and speed.	<i>Digital computer is used to calculate mathematical and logical operations.</i>
It can perform certain types of calculations	<i>It can perform all types of calculations</i>
Examples: Thermometer, analog clock, older weighing machines. Car speedometer, voice , radio/tv signal etc.	Examples: digital watches, digital weighing machines, mini computers, microcomputers, mainframe computers and super computers.

Assessment - Questions

1. CPU referred as _____
2. CPU is a Combination of _____ , _____ and _____
3. Example of Input device
4. Example of Output Device
5. _____ computers are used for mathematical and logical operations.
6. _____ computer has no state
7. _____ computers has discrete value



1. CPU referred as **Central Processing Unit**
2. CPU is a Combination of **Control Unit**, **Arithmetic & Logical Unit** and **Memory Unit**
3. Example of Input device – **Keyboard, Scanner**
4. Example of Output Device – **Monitor, Printer**
5. **Digital** computers are used for mathematical and logical operations.
6. **Analog** computer has no state
7. **Digital** computers has discrete value



References

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- 3.William Stallings, “Computer Organization and Architecture, Designing for Performance” PHI/ Pearson Education North Asia Ltd., 10th Edition 2016, ISBN 978-0-13-410161-3 — ISBN 0-13-410161-8.

Thank You