

Computer Architecture (CSE-2207)

INTRODUCTION

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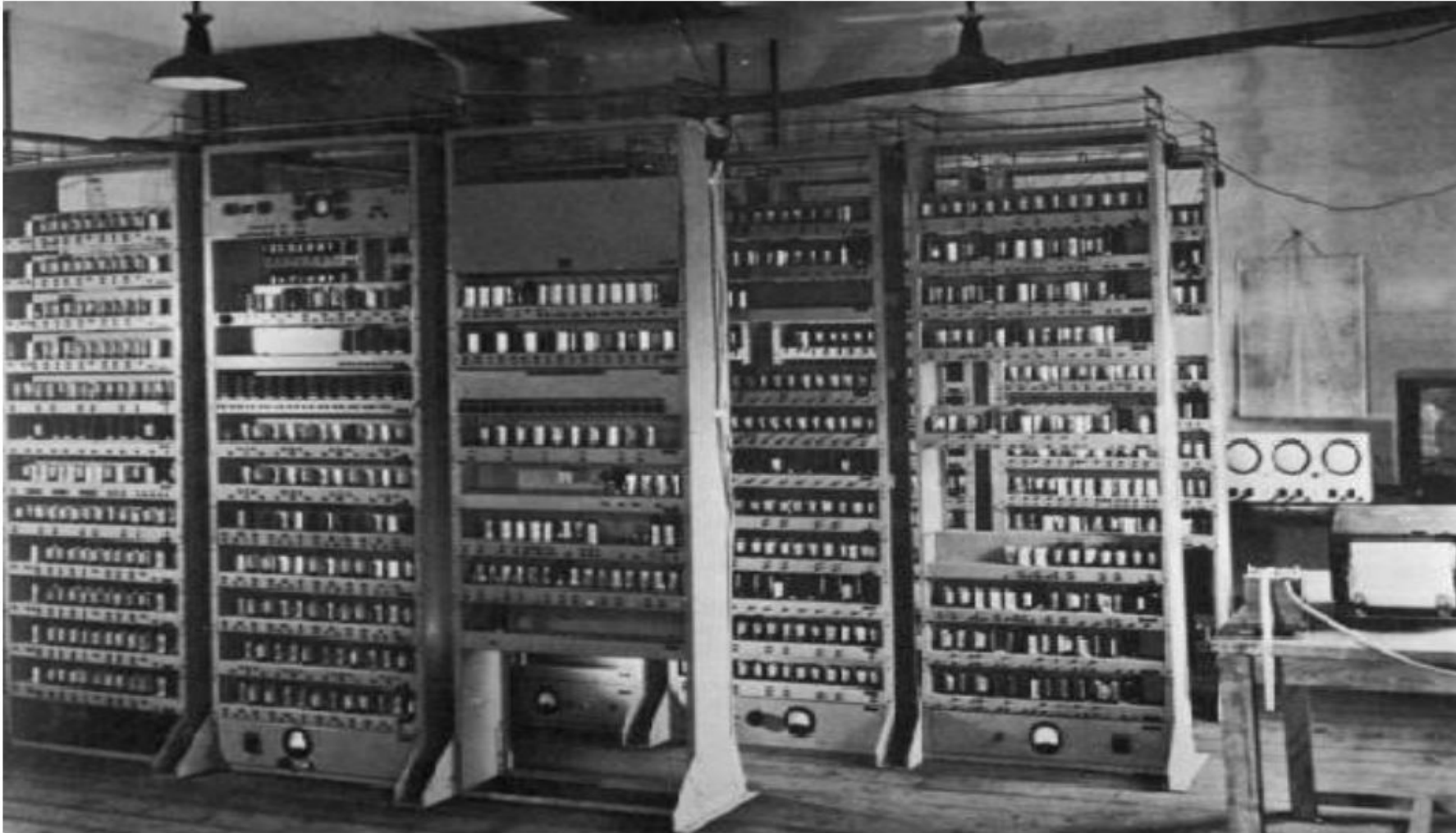
R. P. Shaha University

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Course Logistics

- **2 Class Tests (15%)**
- **2 Assignments (20%)**
- **Class Participation (5%)**
- **Mid Term (20%)**
- **Final Exam (40%)**

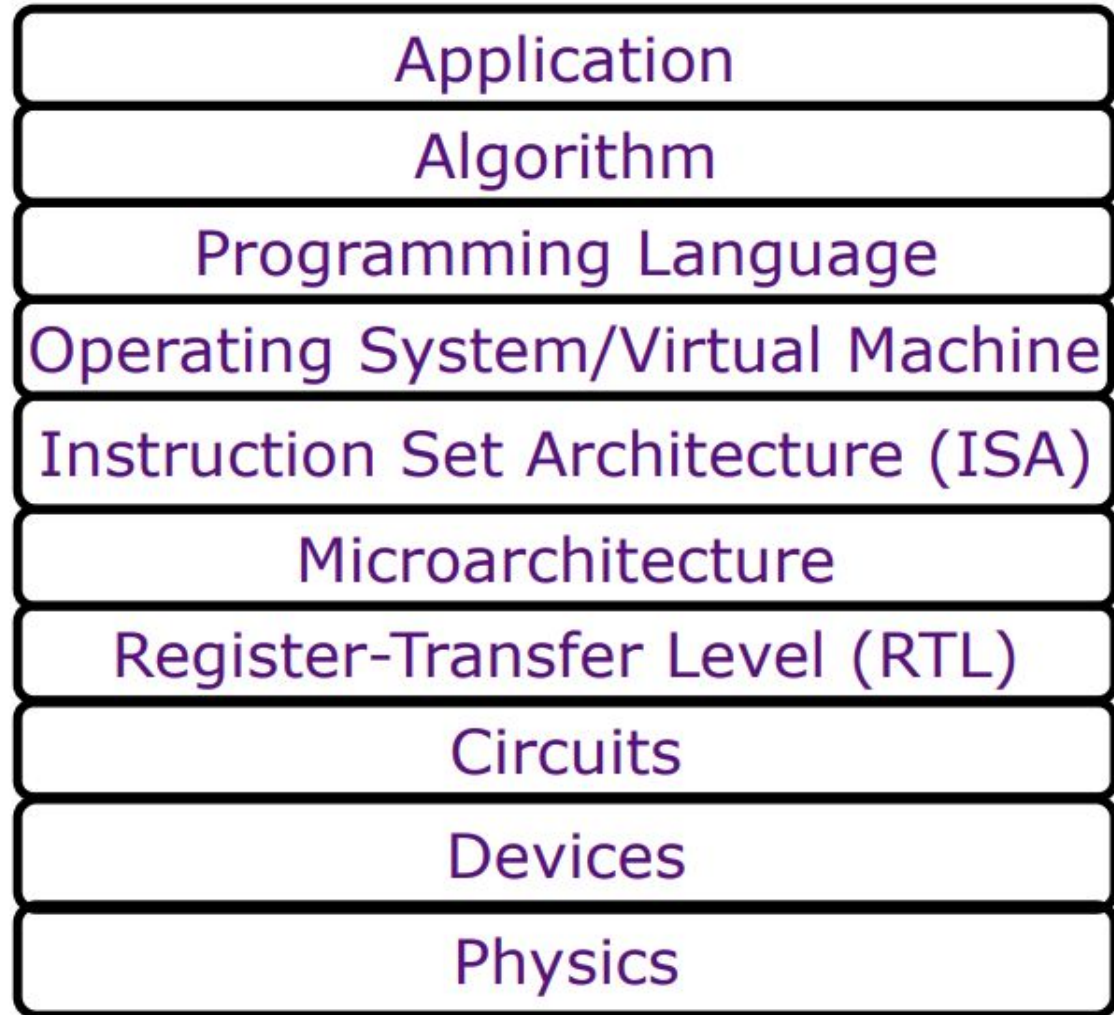
Computing Devices then....



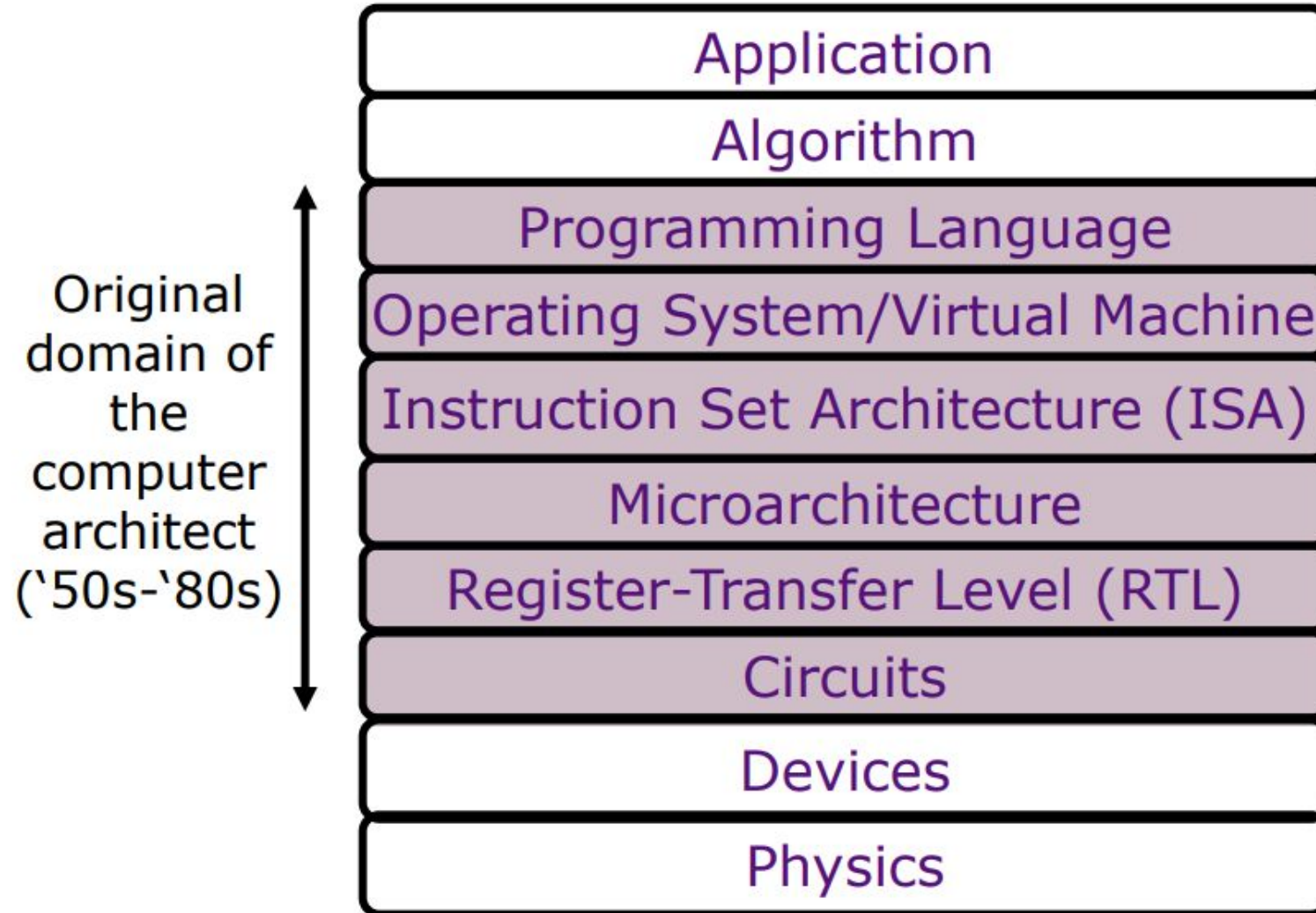
Computing devices now



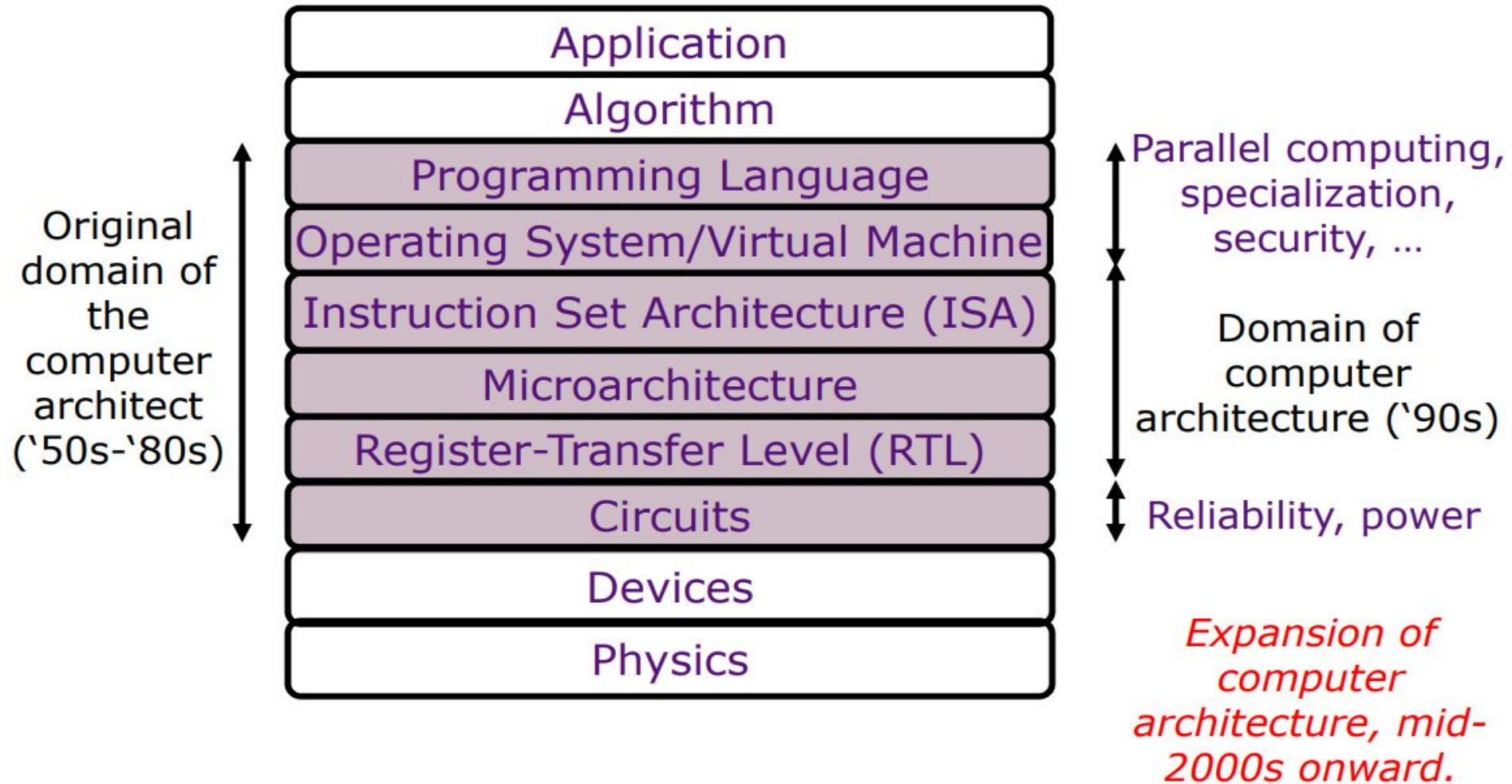
Abstraction layers



Abstraction layers



Abstraction layers



What is Computer Systems

Specification

compute the fibonacci sequence

Program

```
for(i=2; i<100; i++) {  
    a[i] = a[i-1]+a[i-2];}
```

ISA (Instruction Set Architecture)

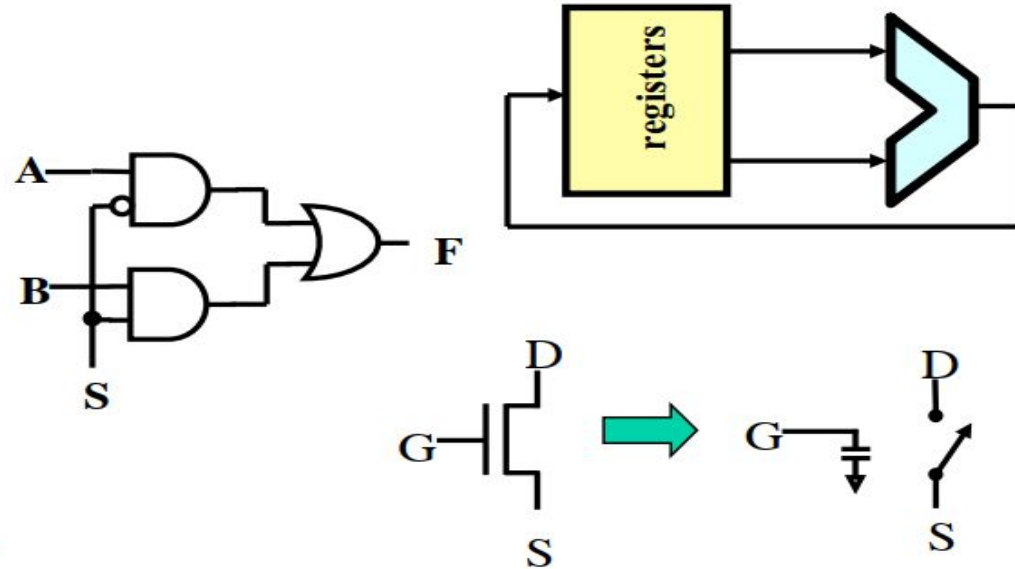
```
load r1, a[i];  
add r2, r2, r1;
```

Microarchitecture

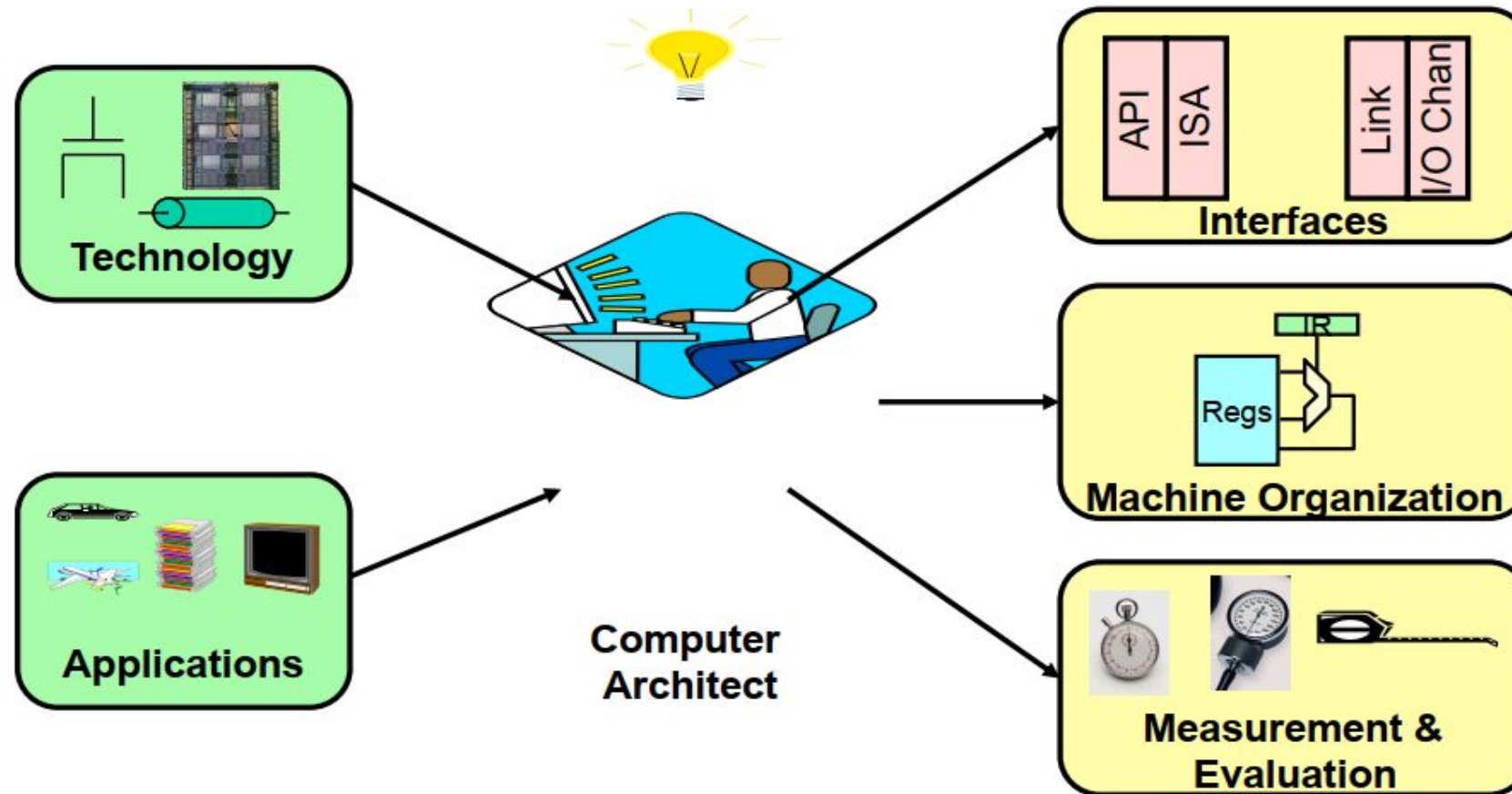
Logic

Transistors

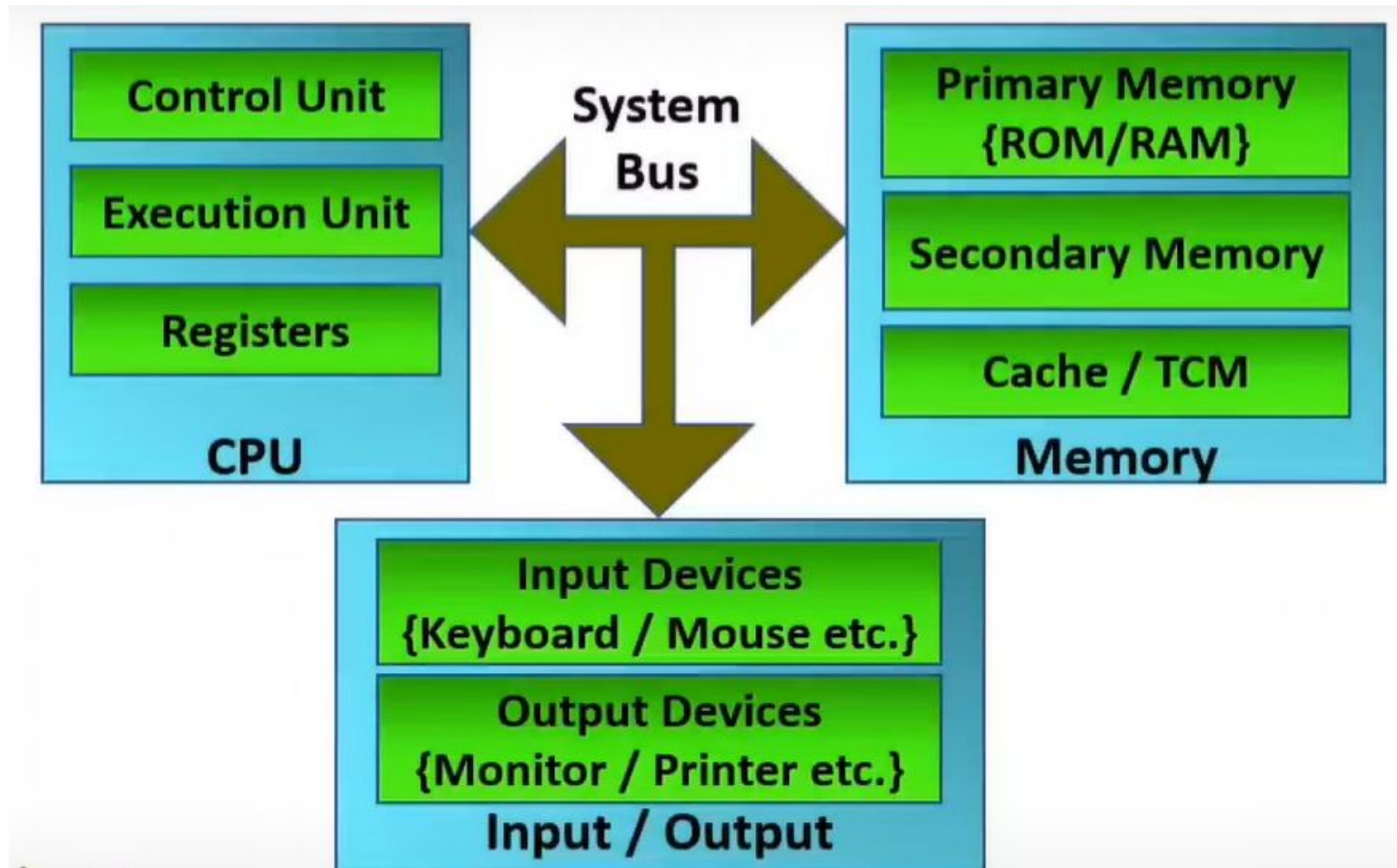
Physics/Chemistry



What is Computer Architecture



Computer Organization



- It is Heart of computer system.
- It consists Control Unit, Execution Unit & Registers.
- It executes all the programs of computer.
- Program execution is execution of instructions in sequence.
- Instruction execution happens in three stages:
 - Fetch
 - Decode
 - Execute
- Fetch and Decode is performed by control unit & execute is performed by ALU.

Memory Unit

- Memory stores programs and data.
- Each instruction and data is stored at unique location into
- memory.
- Primary Memories are ROM and RAM.
- Secondary Memories are like Floppy Disk, Hard disk etc.
- Cache Memory is high speed memory built using SRAM.

IO Devices

- It is used to perform Input and Output operations.
- Input device can be keyboard, Mouse etc.
- Output device can be Monitor, printer etc.
- Touch Screen can be used as Input and Output.
- IO devices are used to access computer system.

System Bus

- System bus lines carries information.
- System includes Address bus, Data bus and control bus.
- Address bus: it carries address information. It explains how much physical memory can be interfaced on lines.
- Data bus: it carries data information. It explains how much data can be exchanged in single machine cycle.
- Control bus; it carries control information. It explains which operation should be performed. {Read/ Write}

THANK YOU