Computer System Design
2 August 2019, <First Meeting>

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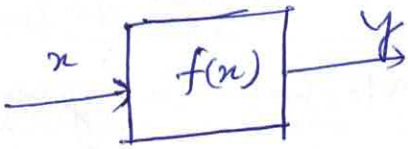
~~Hierarchy of computer system:-~~

## Computer System Design

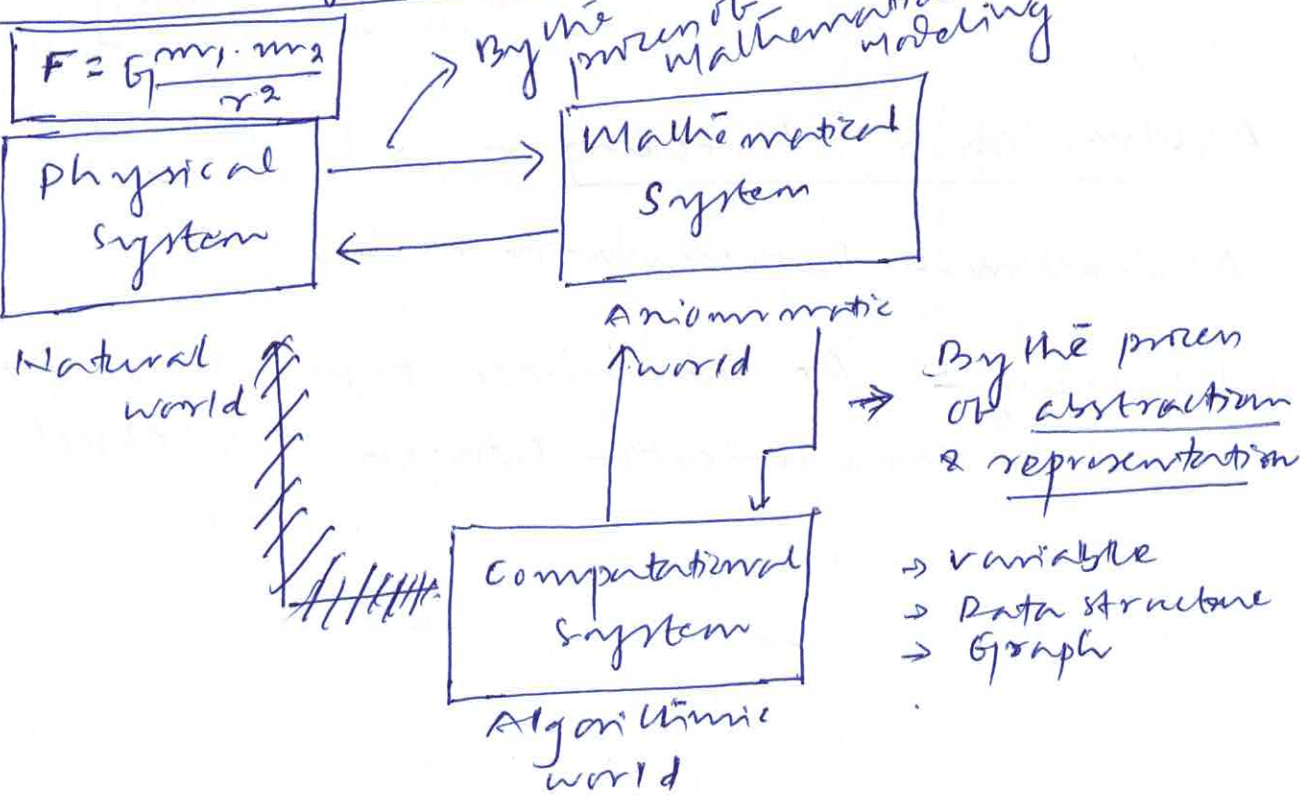
**Design:-** Designing a modern general purpose computer system from the bottom to top.

Defining a computer system:-




- a computer system is like a input-output system

Three different type of System:-



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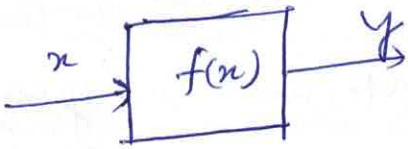


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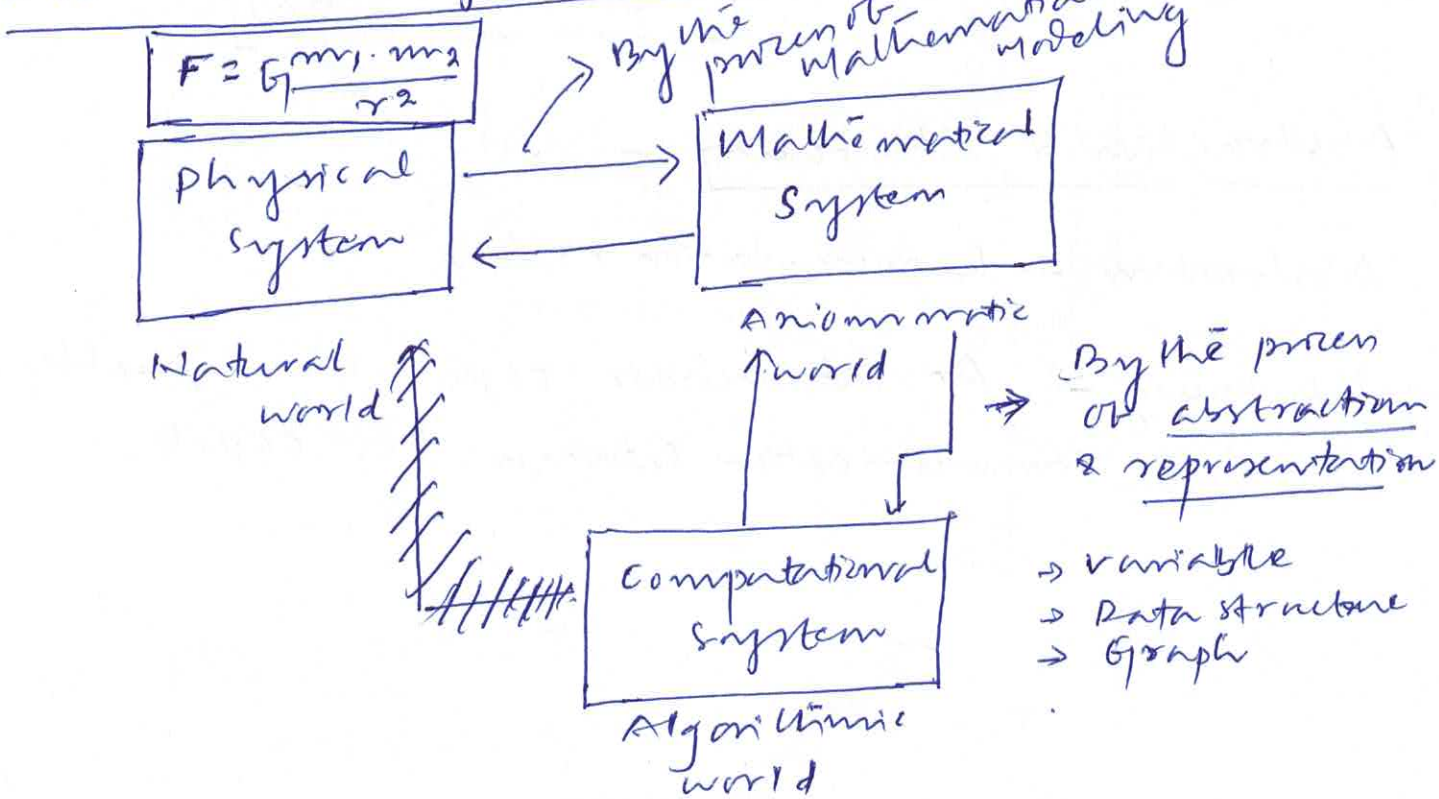
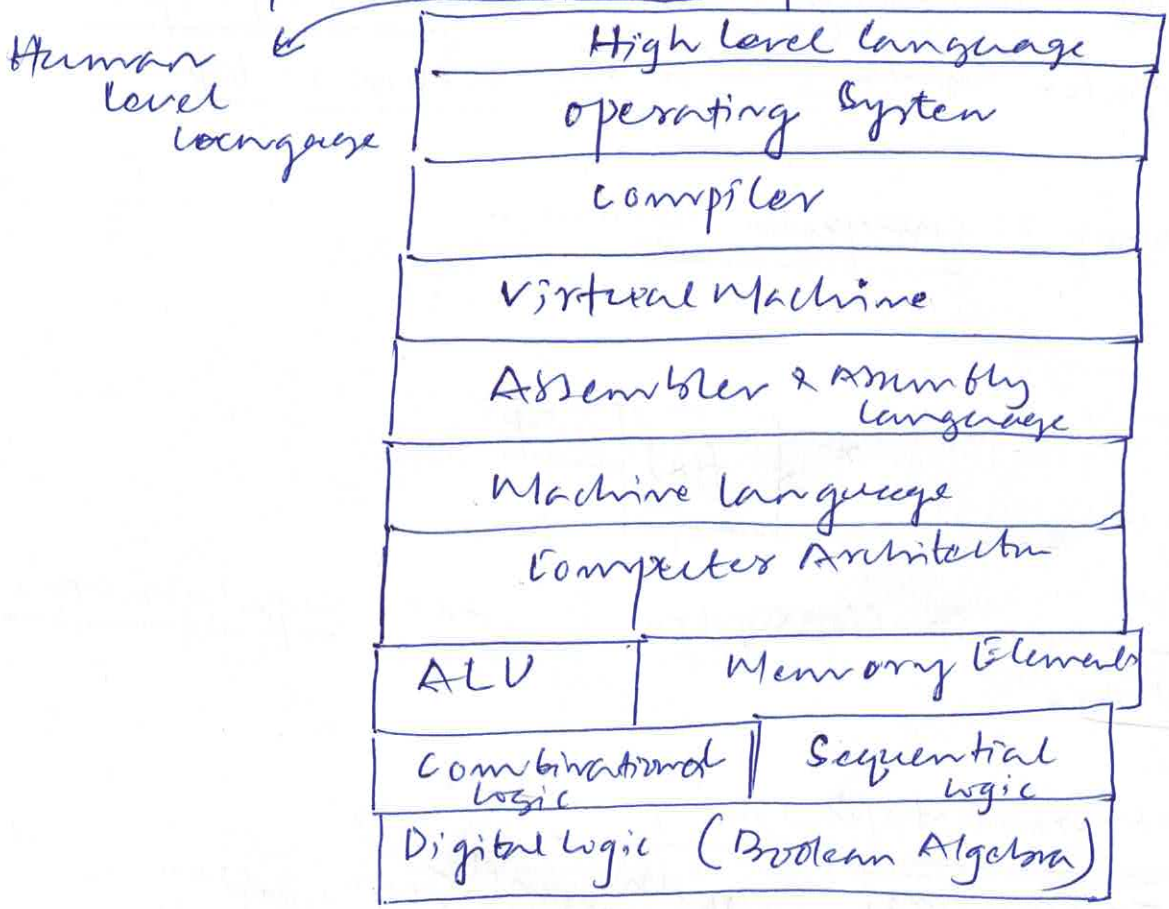


Computer System — A physical view of computational system

System - A set of things working together as parts of a mechanism for an well defined function.

Modern computer system :- is a hierarchical System




Abstraction & Interfacing :-

Abstraction — Representation of idea

Interfacing — An intermediate object which enables communication between two objects.

Top-to-Bottom view

Human language problem

Application

Application
or
System Design

High level Language & operating System

compiler

Virtual Machine

VM Translator

Assembly Language

Assembler

Machine language

Computer Architecture

Hardware platform

Chips and Gates (CMOS)

physics

Design approach

Bottom-to-top

Design Methodology – (General purpose computer)

Hardware :-


Design :-

Design specification

↓

Synthesis
- High level (Architectural)
- Gate level (Logic level)
- Geometry level (physical Design)

Design verification / validation

↓ Goes to foundry

Fabrication

↓

Wafer Testing

↓

Packaging

↓

Final package Test-