CENG101 Introduction Computer Engineering

Dr. Mustafa BIÇAKCI

Assessment

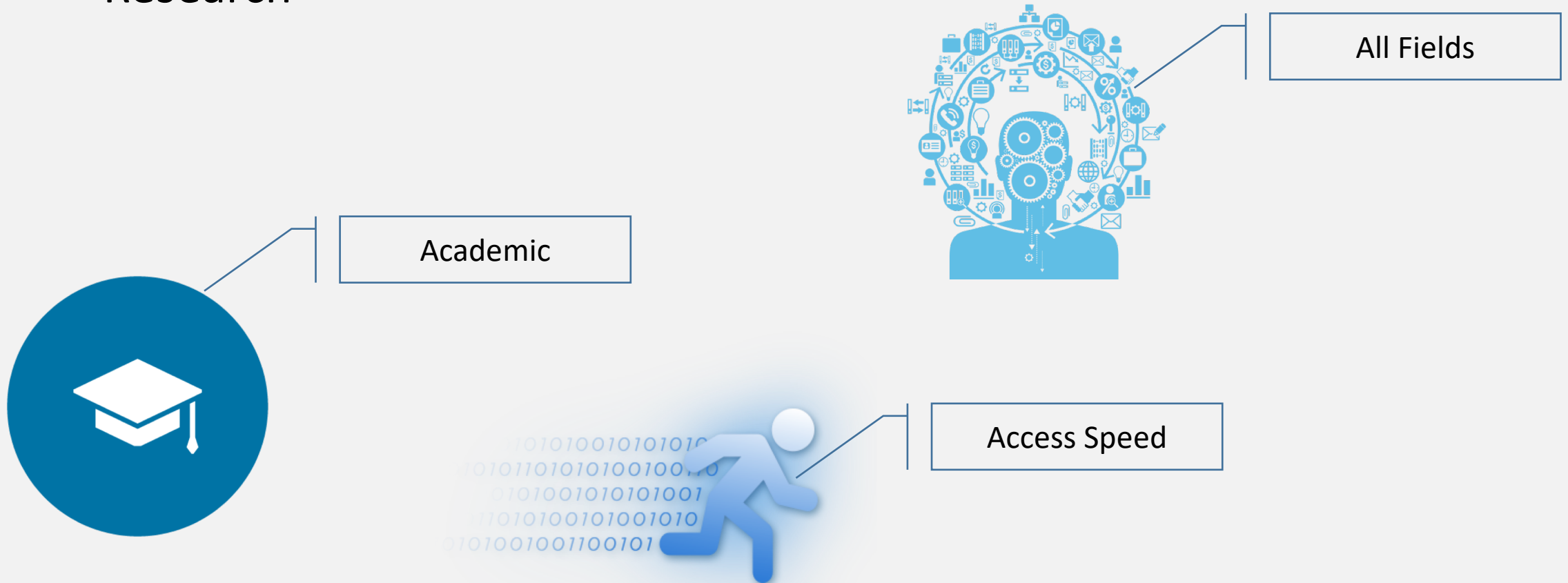| Activities	Quantity	Weight, %
Midterm Exam	1	40
Final Exam	1	60
TOTAL		100

Important Things!

- Class time → **13.40 Wednesday**
- Google Classroom Code: **4dod7sh**

- **DO NOT HESITATE TO ASK A QUESTION PLEASE !!!**

Why Do We Use Computers?

Why Do We Use Computers?

- Research

All Fields

Academic

Access Speed

Why Do We Use Computers?

- Communication

Instant Messaging

E-Mail

Voice Call and Video Chat

Why Do We Use Computers?

- Science

Why Do We Use Computers?

- Business

Globalization

Business Efficiency

E-Commerce

Why Do We Use Computers?

- Social Networks
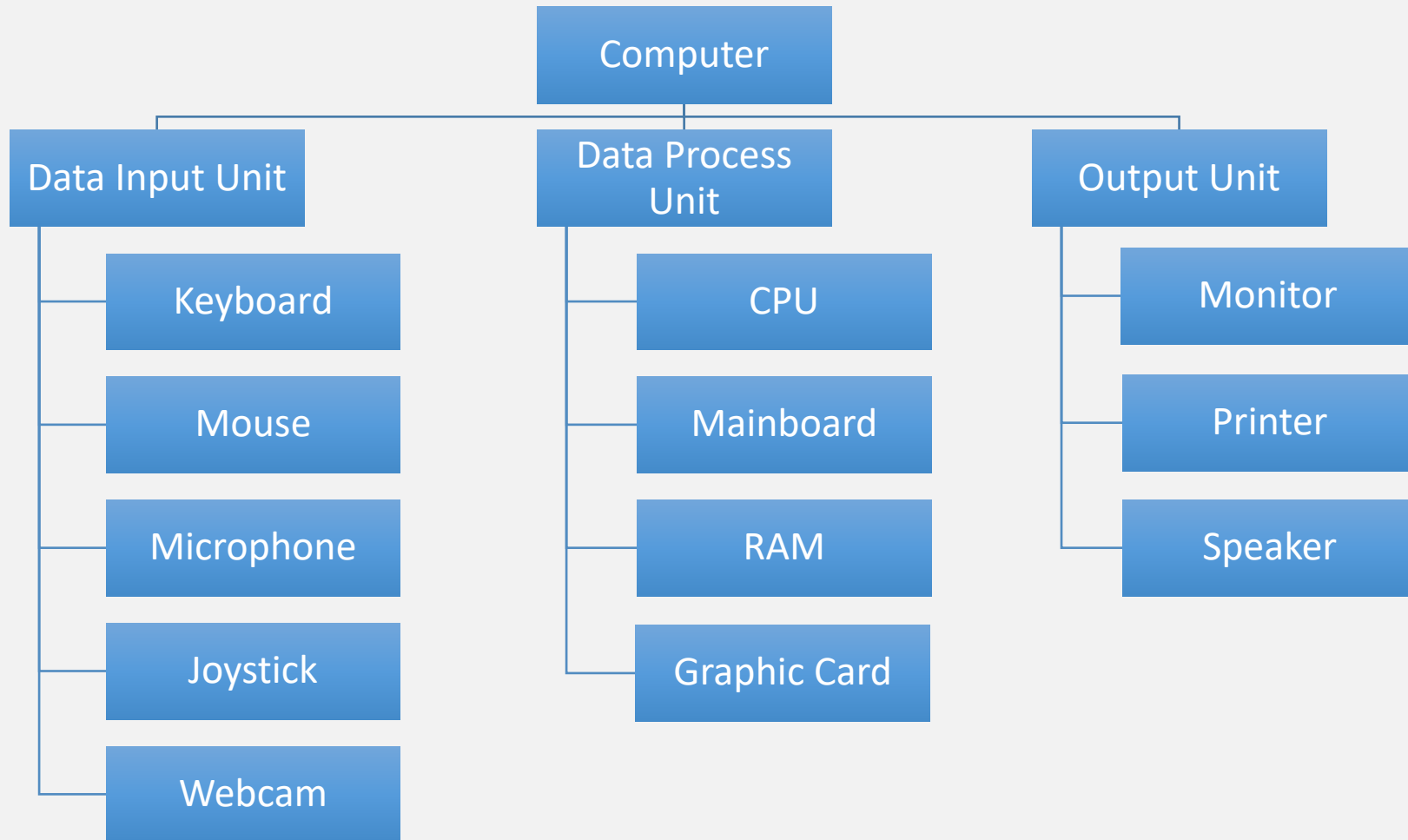
Why Do We Use Computers?

- Entertainment

Game

Music

Movie

What is a Computer?

- **Computer** is an electronic device that manipulates information, or data.

- It has the ability to **store**, **retrieve**, and **process** data. You know that you can use a computer to **type documents**, **send email**, **play games**, and **browse the Web**. You can also use it to edit or create **spreadsheets**, **presentations**, and even **videos**.

  - Data Input Unit
  - Data Process Unit
  - Output Unit

Computer

Binary System

- The data is processed by binary numbers in the computer. Binary number system consists of "0" and "1" numbers. This system is expressed by different voltage levels on the computer.

- Assuming that the computer uses a voltage of 8 volts, 8 volts if activated, logical "1", if there is 0 volts, logical "0" can say that it represents the information.

- Think that light is on for logic "1" and light is off for logic "0".

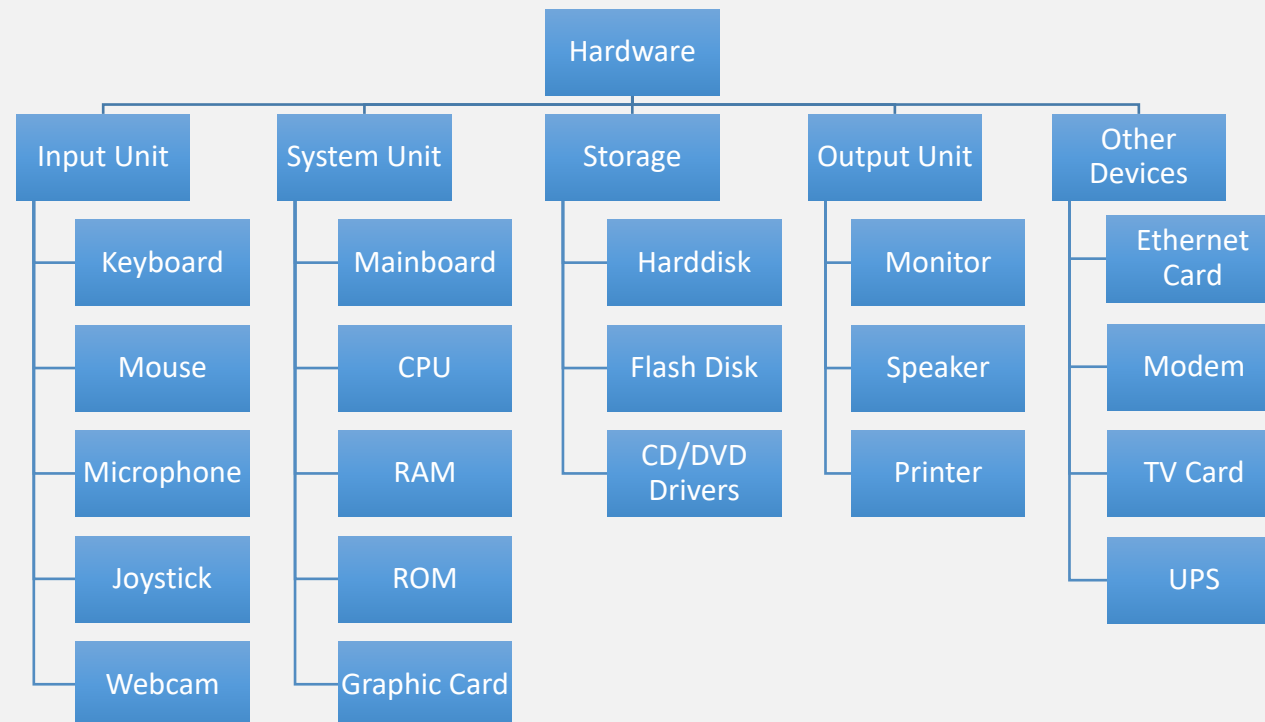- Computer stores the data as "1" and "0". Each "0" and "1" is called bit.

Measurement Units

- 8 bits coming together is called a byte consisting meaningful information. Each byte is a character that actually creates meaningful information.
  - Exp: The letter "A" is represented as byte in computer: 01000001

1 Byte	2^3 Bit	8 Bit	-	-
1 KiloByte(KB)	2^{10} Byte	1024 Byte	1024x8 Bit	-
1 MegaByte(MB)	2^{10} KB	1024 KB	1024x1024x8 Bit	-
1 GigaByte(GB)	2^{10} MB	1024 MB	1024x1024x1024x8 Bit	-
1 TeraByte(TB)	2^{10} GB	1024 GB	1024x1024x1024x1024x8	Bit

Hardware

- A computer system consists of **hardware** and **software.**

- **Hardware:** Concretely, all of the components of the computer are called hardware. They are visible electronic circuits.

Software

- **Computer Software (Software):** Instructions called software that enables us to manage the computer. All programs that allow the user to use the computer and application development. The software is divided into two main sections:

  - **1. System Software:** Software that manages a computer. Operating systems and programming languages fall into this class. (Exp: MS Windows 10, Linux, Java, PHP).

  - **2. Application Software:** User-based programs such as MS-Office, store automation, accounting programs, which fall into this category.