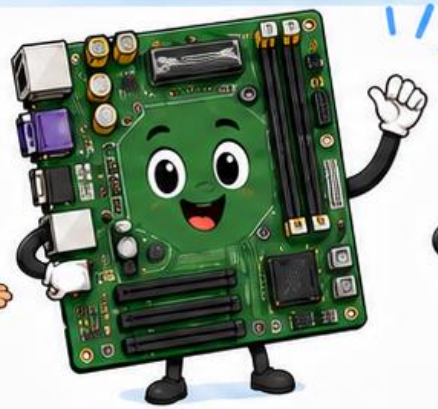
# Computer Parts - Internal

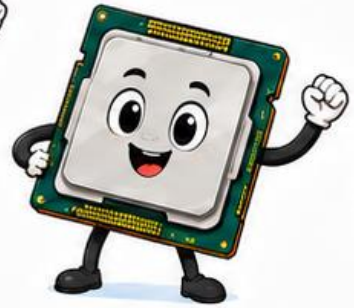
## What's inside a computer?

# If we open a computer, what would we find inside?

# Meet the Computer Team



Motherboard



CPU

RAM

Storage

GPU

Power Supply

# This is like looking inside the body of a computer.

All the parts work together to help your computer do amazing things!

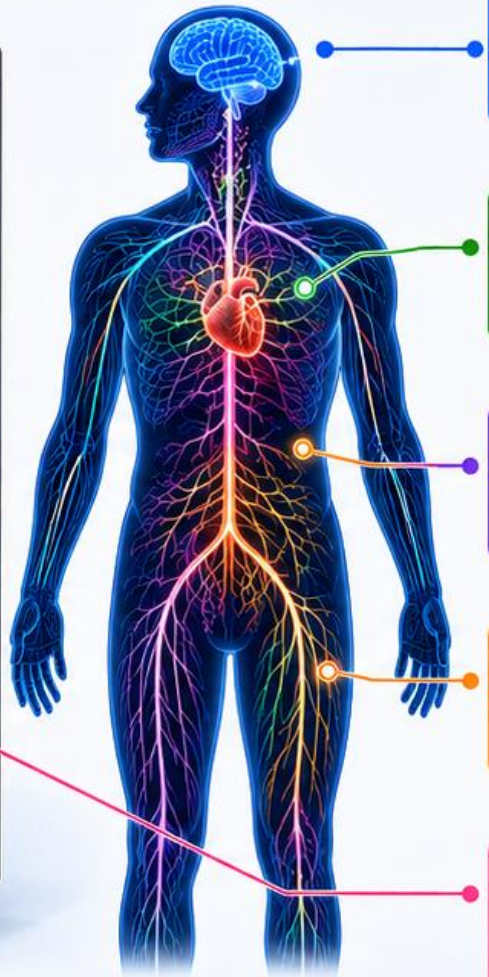

### CPU
The brain of the computer. Processes instructions and does calculations.

### RAM
Temporary memory that stores data the computer is using right now.

### MOTHERBOARD
The main circuit board that connects all parts and lets them communicate.

### GPU (GRAPHICS CARD)
Creates images and video. Great for gaming, editing, and watching videos.

### POWER SUPPLY
Provides power to all the parts so the computer can work.

### BRAIN
Thinks, processes information and controls everything.

### SHORT-TERM MEMORY
Holds information temporarily while you are using it.

### NERVES (COMMUNICATION)
A network that connects everything and sends signals.

### ENERGY (POWER)
Provides power to all parts so the body can work.

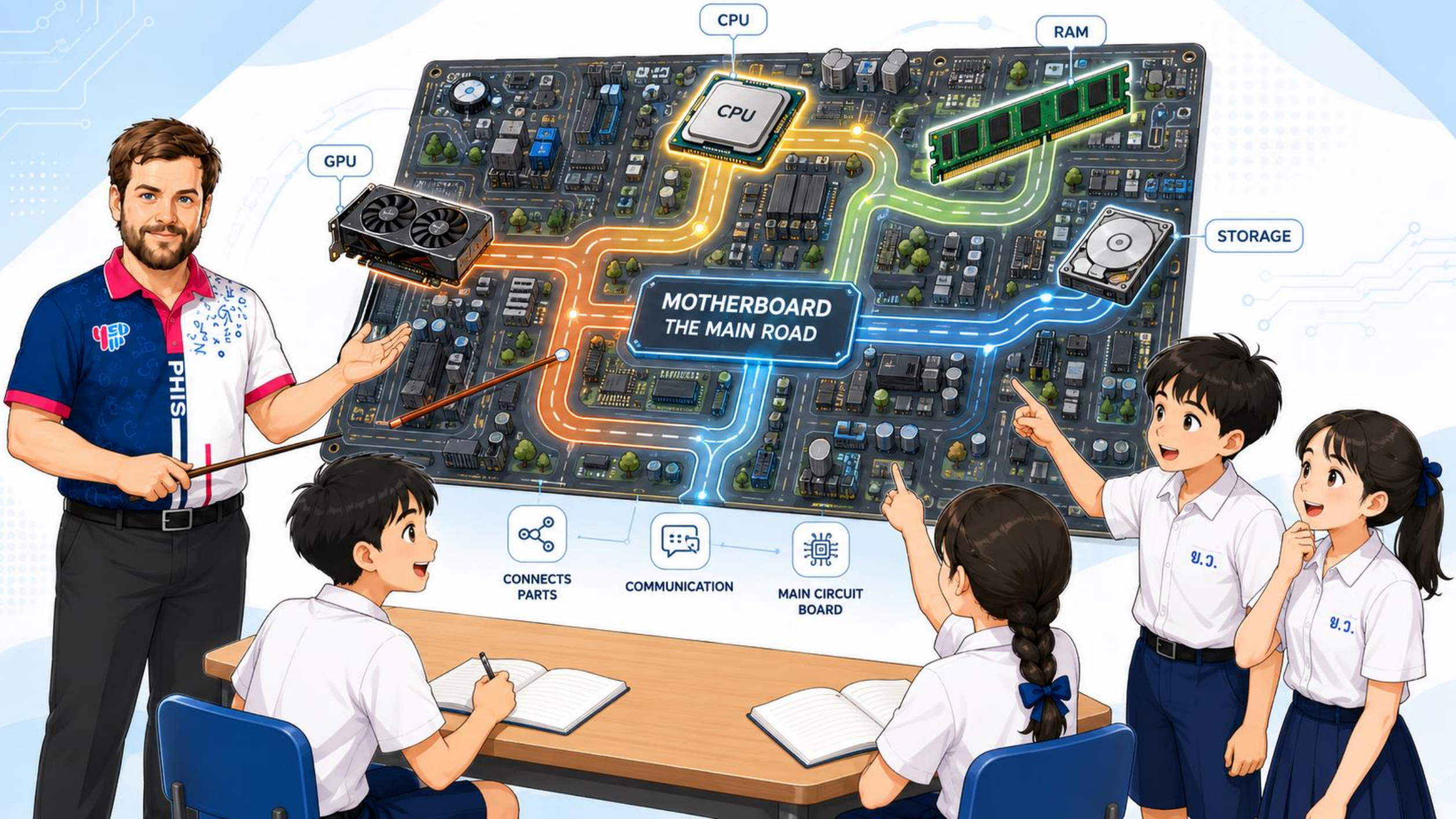
### LONG-TERM MEMORY
Stores information for a long time, like memories.

**Different parts, same mission:**

Work together

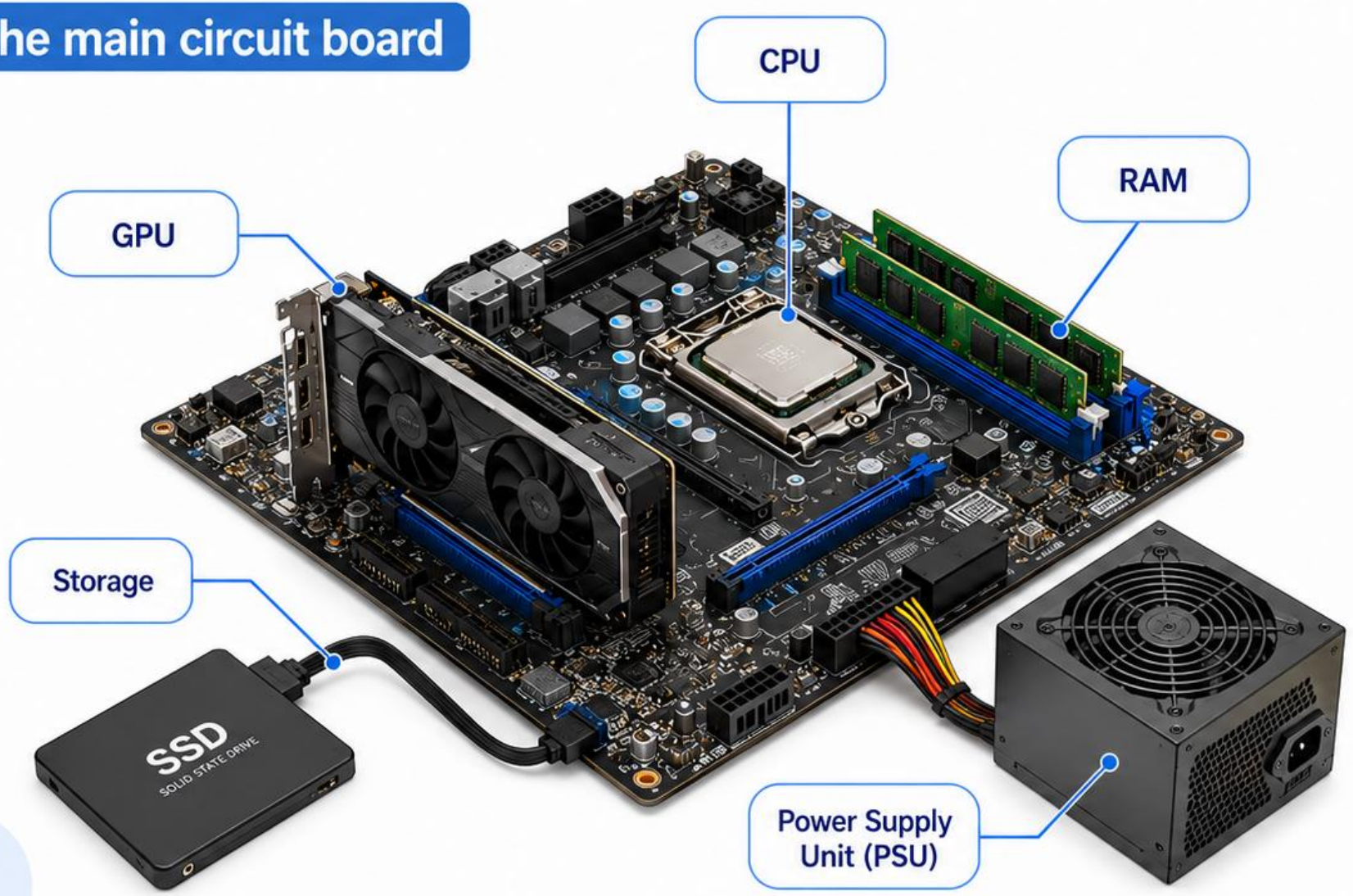
Communicate

Make everything happen


CPU
RAM
GPU
STORAGE
MOTHERBOARD
THE MAIN ROAD
CONNECTS PARTS
COMMUNICATION
MAIN CIRCUIT BOARD

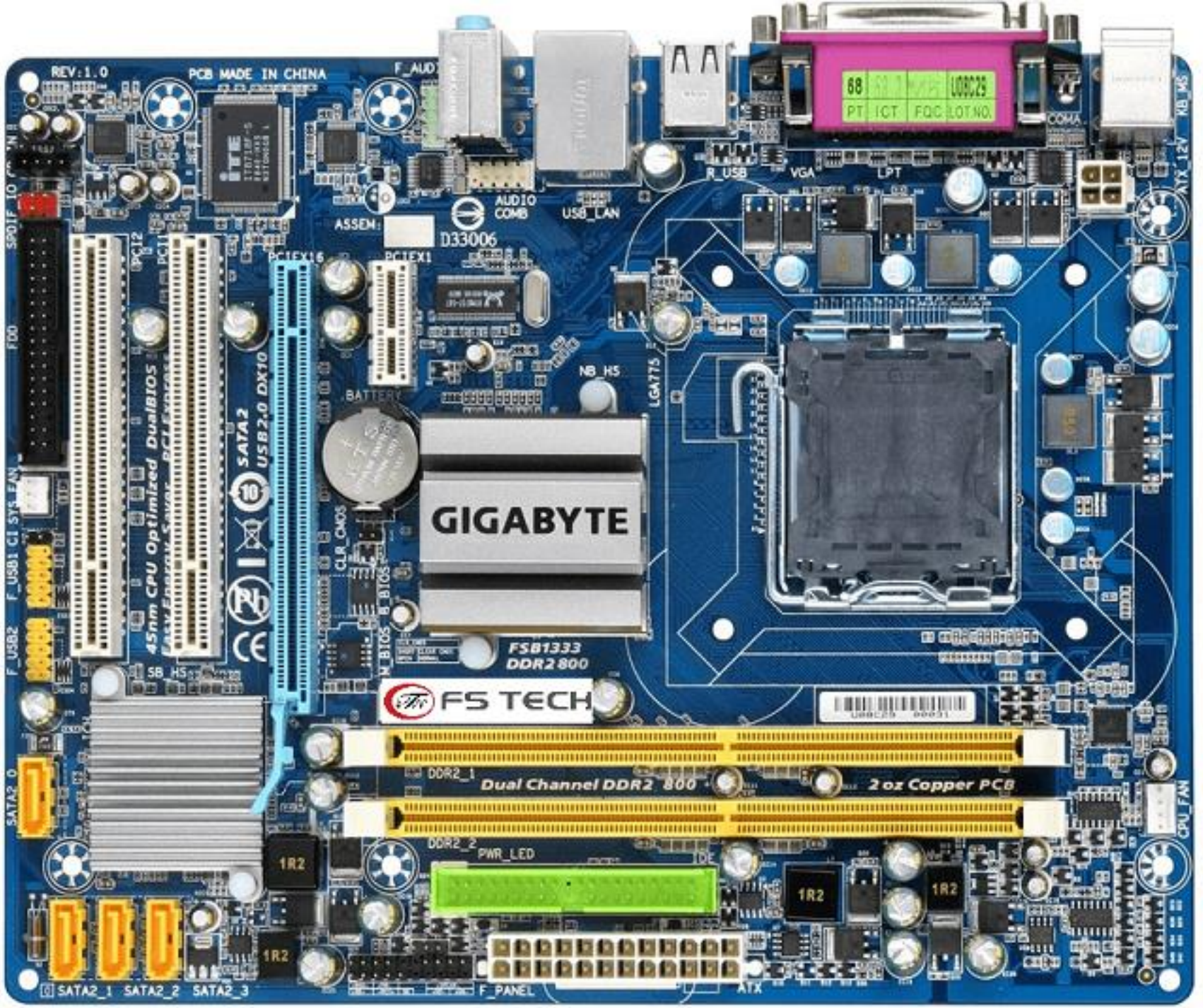
# Motherboard

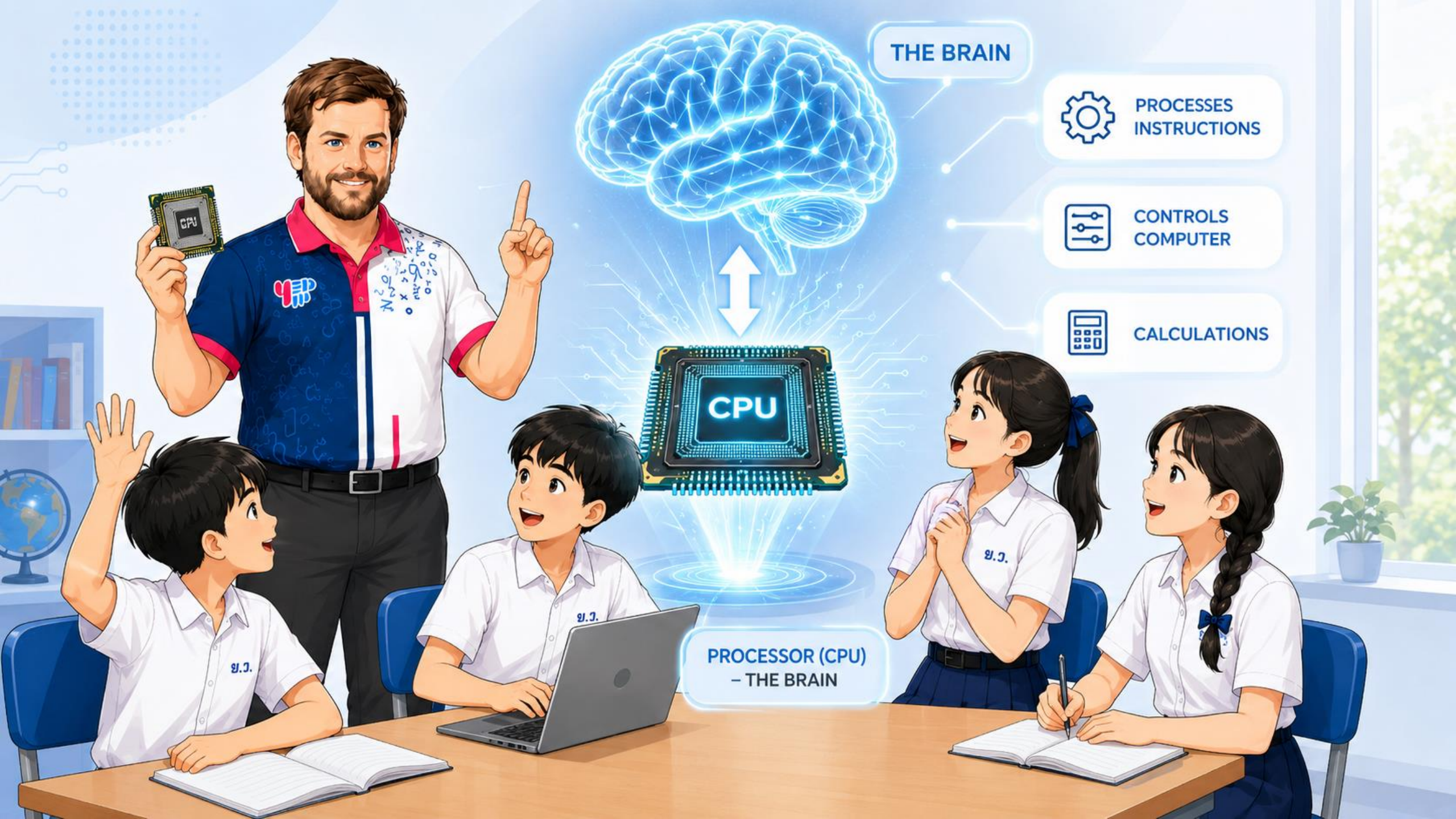
## The main circuit board




- Main circuit board
- Connects computer parts
- Lets parts communicate
- Moves data and power

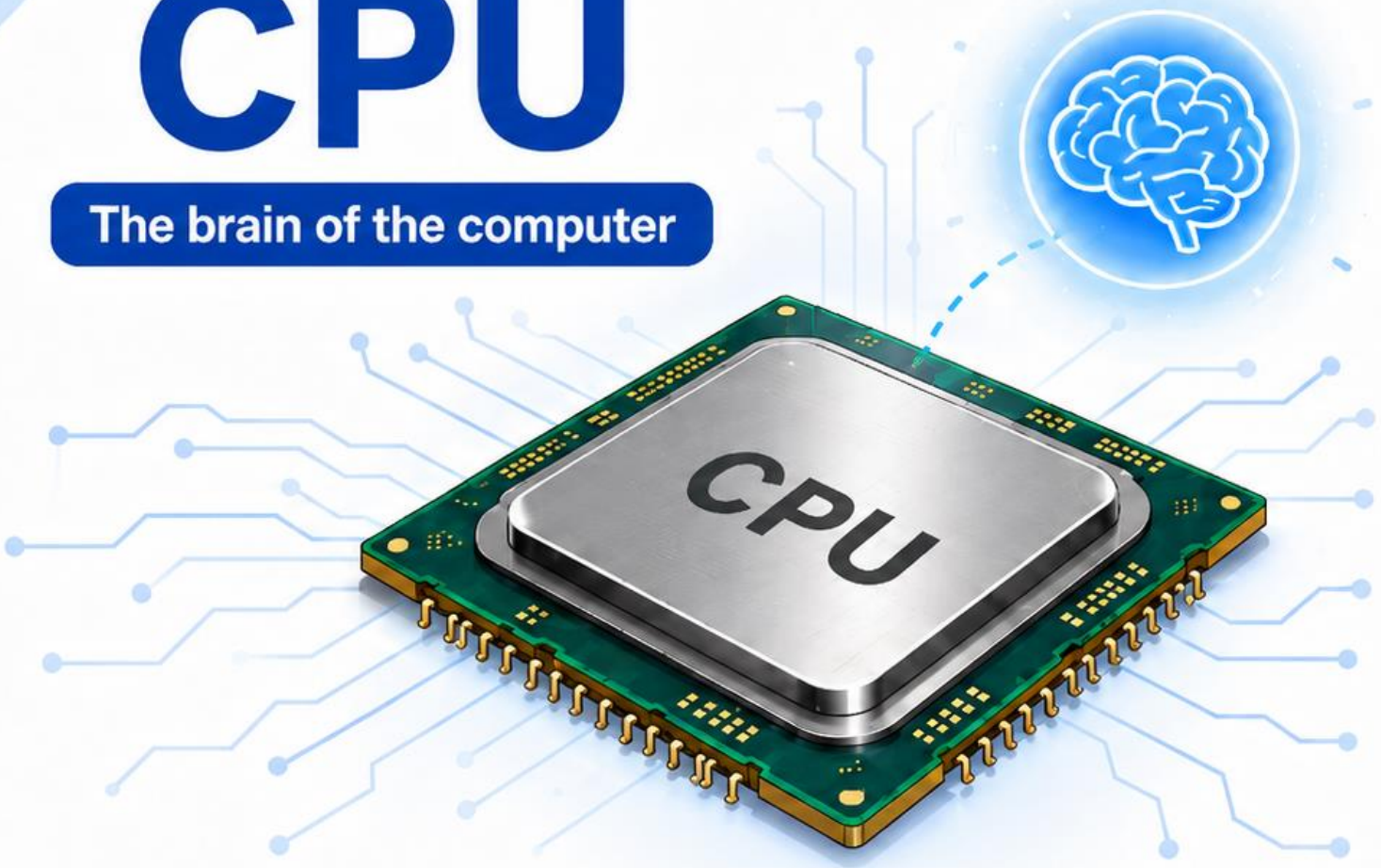
Think of the motherboard as the **main road system** of the computer.


REV:1.0
PCB MADE IN CHINA
AUDIO
COMB
USB_LAN
R_USB
VGA
LPT
COMA
ATX_12V
D33006
PCIEX16
PCIEX1
BATTERY
NB_HS
LGA775
GIGABYTE
45nm CPU Optimized DualBIOS
SATA2
USB2.0 DX10
CLR_CMOS
B_BIOS
M_BIOS
FSB1333
DDR2 800
SB_HS
FS TECH
DDR2_1
Dual Channel DDR2 800
2 oz Copper PCB
DDR2_2
PWR_LED
1R2
SATA2_1
SATA2_2
SATA2_3
F_PANEL
ATX
CPU_FAN
FDD
F_USB1
F_USB2
SATA2_0


THE BRAIN
PROCESSES
INSTRUCTIONS
CONTROLS
COMPUTER
CALCULATIONS
CPU
GPU
PROCESSOR (CPU)
– THE BRAIN

# CPU

**The brain of the computer**




CPU =
Central Processing Unit

Processes
instructions

Performs
calculations

Controls what
the computer does

Think of the CPU as
the brain or manager
of the computer.

Click app → CPU processes → Computer responds

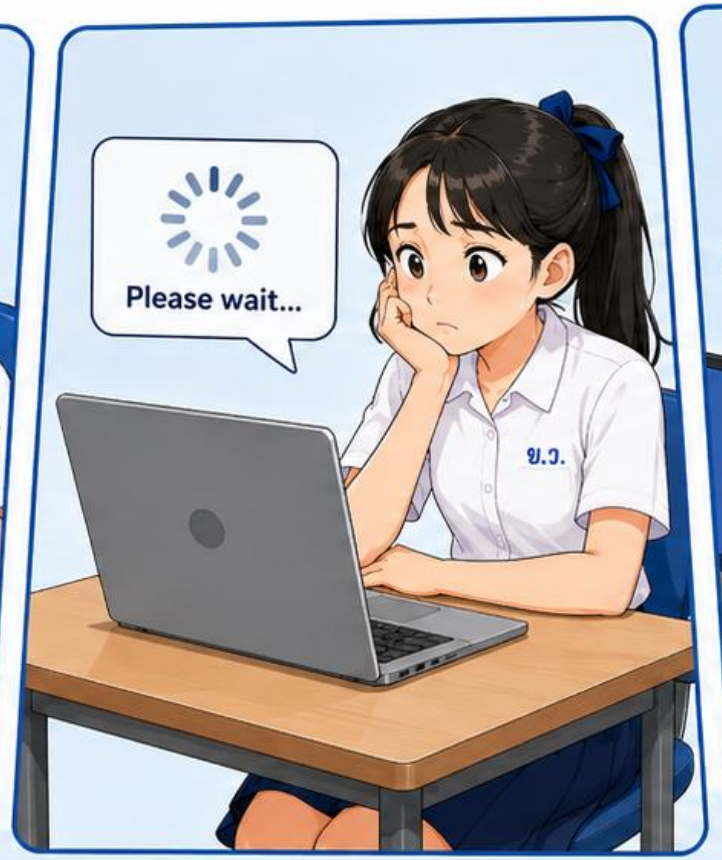
# What is this?



AMD

Intel

# What happens if the CPU is slow?



RAM
Short-Term Memory
FAST
TEMPORARY

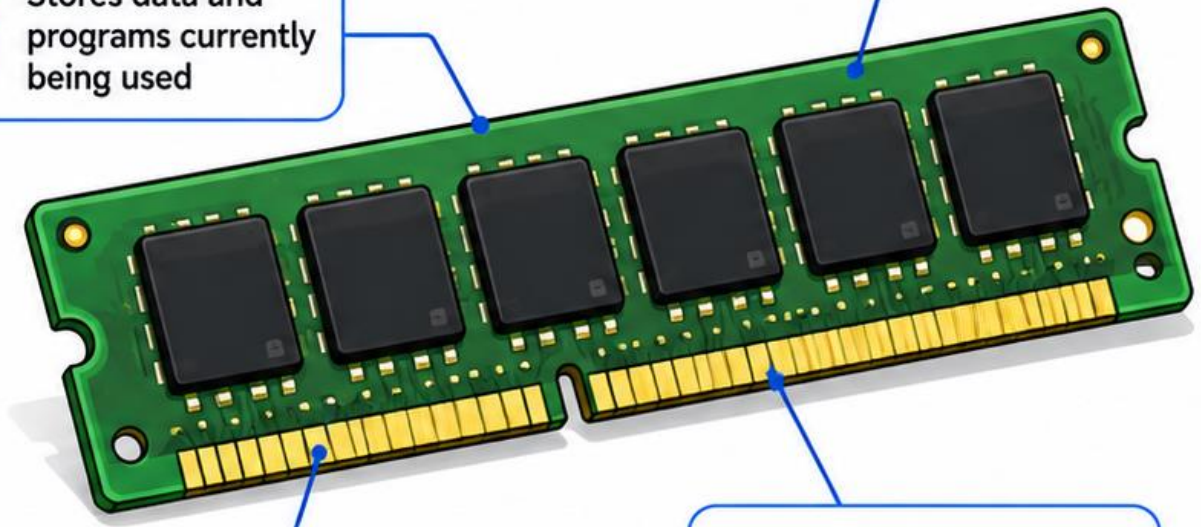
# RAM

## Short-Term Memory

**RAM** = Random Access Memory

Stores data and programs currently being used

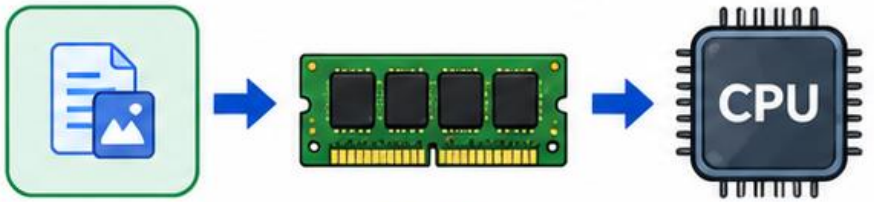
Fast read and write access



Temporary storage

Volatile memory – data is lost when power is off

## How RAM works




Apps / files in use

**RAM**

CPU

quick access

## Volatile memory

**Power ON**
= data stays in RAM

**Power OFF**
= RAM is cleared

# Storage

## Saving user data


Seagate
Desktop HDD
4000GB
IMPORTANT!
www.seagate.com

2.5 inch SATA SSD


mSATA SSD


Half mSATA SSD


SATA M.2 SSD

# RAM

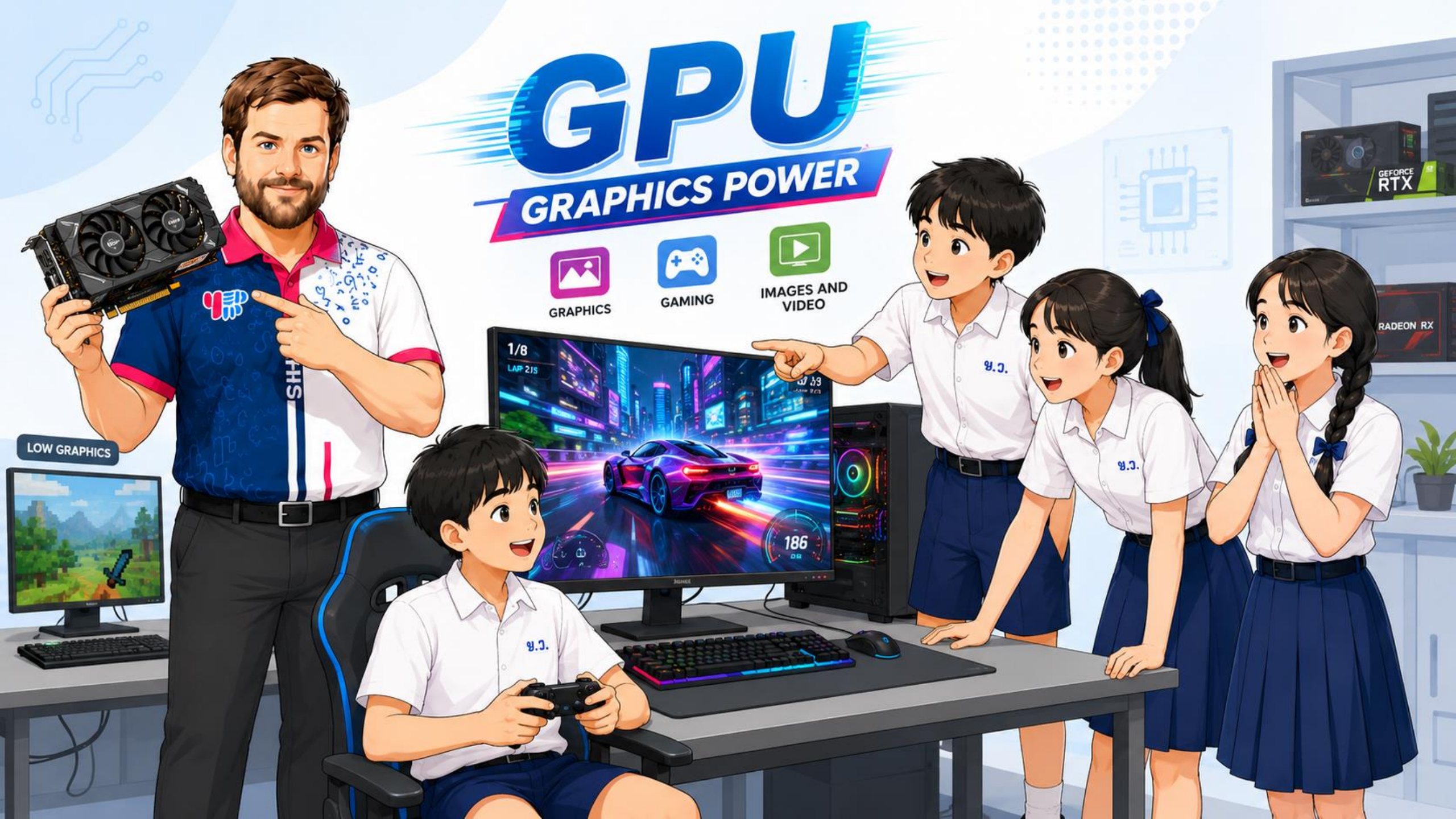
Temporary Working Area

- Temporary
- Fast
- Clears when off

# STORAGE

Permanent File Library

- Permanent
- Slower
- Keeps files

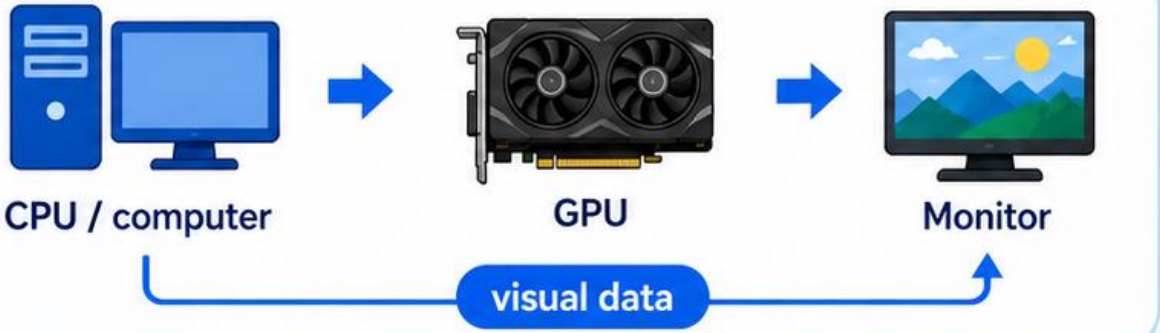

GPU
GRAPHICS POWER
GRAPHICS
GAMING
IMAGES AND VIDEO
LOW GRAPHICS
GEFORCE RTX
RADEON RX
1/8
186

# GPU

## Graphics Processing Unit

**GPU** = Graphics Processing Unit

- Processes images, videos, and graphics
- Helps display visuals on the monitor
- Used for gaming, videos, and graphic-intensive tasks
- Works with the CPU for better visual performance

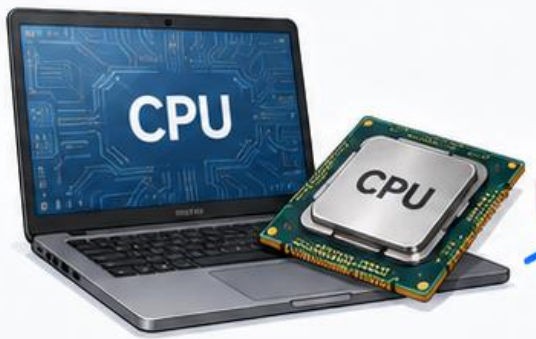



Think of the GPU as the **artist** of the computer.

# Types of GPU

## Integrated vs Dedicated


### Integrated GPU




- Built in
- Uses less power
- Good for basic graphics

Vs

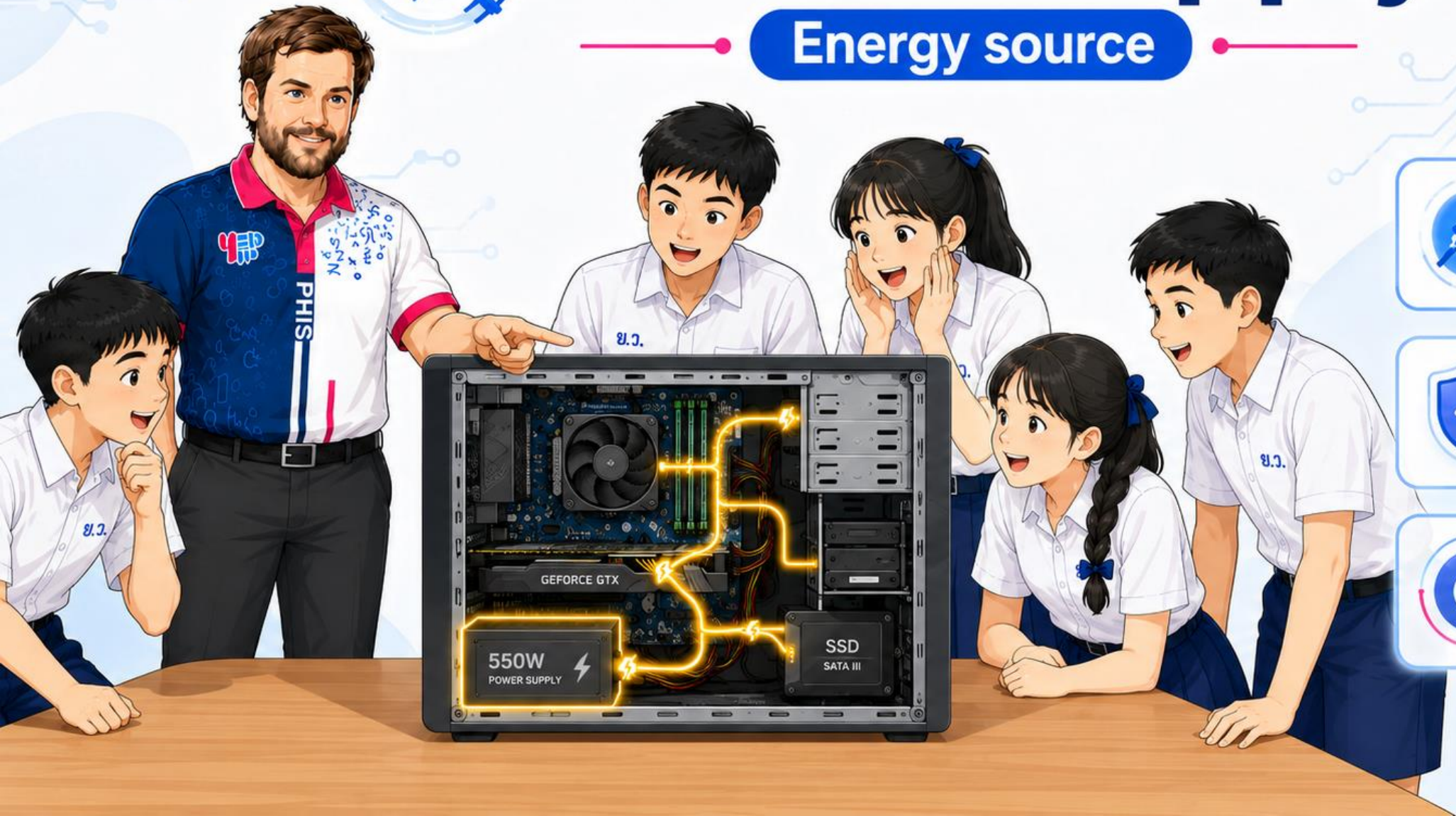
### Dedicated GPU

- Separate card
- More powerful
- Better for games/design


GIGABYTE
GEFORCE RTX 2080 Ti
GIGABYTE
GEFORCE RTX
2080 Ti
GAMING OC 11G
RAY TRACING / GDDR6 / DIRECTX 12 / ANSEL
GEFORCE RTX
2080 Ti
ASUS
PRIME
GRAPHICS CARD
OC 8GB
GEFORCE RTX
5060
GEFORCE RTX
5060

# Power Supply

## Energy source




- Gives power to parts
- Converts electricity safely
- Computer cannot turn on without it


CORSAIR
CX550M
BRONZE
Thermaltake
TR2 430W
ATX 12V 2.2

# Optical Drive

## Reading discs with laser light

# Floppy Disk

## *Old storage device*


**?** Could a floppy disk store a huge modern game?


VS


**1.44 MB** **Many GB**

Floppy disks could hold documents and small files, but **NOT** huge modern games!

# Which Parts Are Most Important?

## Choose the best upgrade

### Gamer

Play games smoothly

Recommended Upgrade

**GPU + CPU**


### Student

Study, do assignments, and store files

Recommended Upgrade

**RAM + Storage**


### Video Editor

Edit videos faster and smoother

Recommended Upgrade

**CPU + RAM + GPU**


**Different tasks need different upgrades.**
Choose the right parts to get the best performance for what you do most!


**CPU**
Processes instructions

**RAM**
Temporary memory

**GPU**
Handles graphics


**Storage (SSD)**
Stores files and programs

# What Part Am I?

Match the description to the correct computer part

## Descriptions

1. I am called the brain of the computer.
2. I forget everything when the power turns off.
3. Without me, games may lag or look bad.
4. I become full after downloading too many games.
5. I am the giant road system inside the computer.
6. Without me, every other computer part becomes useless.

## Parts


Power Supply


Motherboard

CPU


GPU

Storage


RAM

# Guess the Computer Part

## Use the emojis as clues

1. 🧠 + ⚡ + 💻
2. 💾 + 📁
3. 🎮 + 🖼️
4. ❤️ + ⚡

CPU

RAM

GPU

STORAGE

POWER SUPPLY

### CPU


The brain of the computer. Processes instructions.

### RAM

Temporary memory that the computer uses while working.

### GPU

Handles graphics and images. Great for gaming and visuals.

### STORAGE

Stores your files, photos, videos, and programs.

### POWER SUPPLY

Provides power to all parts of the computer.


# Any questions?

# Quick review


1. Which part is temporary memory?
2. Which part creates graphics?
3. Which part stores files permanently?

# The End