

# **Application of Information & Communication Technologies**

**Lecture-5**

# Recap of Lecture 4

- ◆ Motherboard
  - The Motherboard
  - Power Supply
  - Drive Bays
  - Processors
  - Memory
  - Cooling Components
  - Expansion Slots & Cards
  - Buses
  - Ports & Connectors

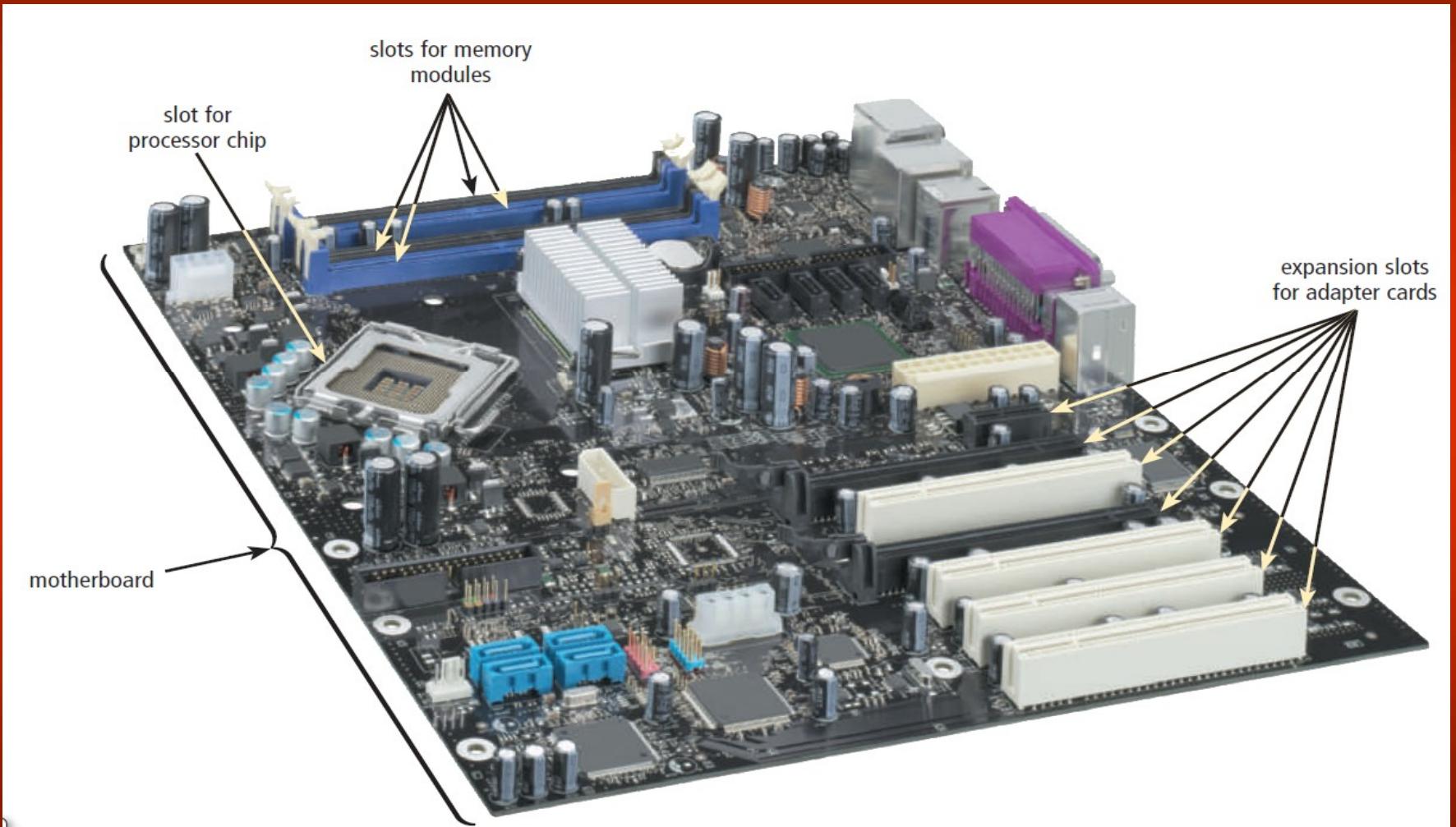
# Overview of Lecture 5

- ◆ Inside System Unit
  - Ports & Cables
  - Expansion Cards and Slots

# The Motherboard

- ◆ **Motherboard or System board**
- ◆ **Main circuit board inside the computer.**
- ◆ **All parts connect to it: CPU, memory, storage, cards.**
- ◆ **Without motherboard → parts cannot talk to each other.**

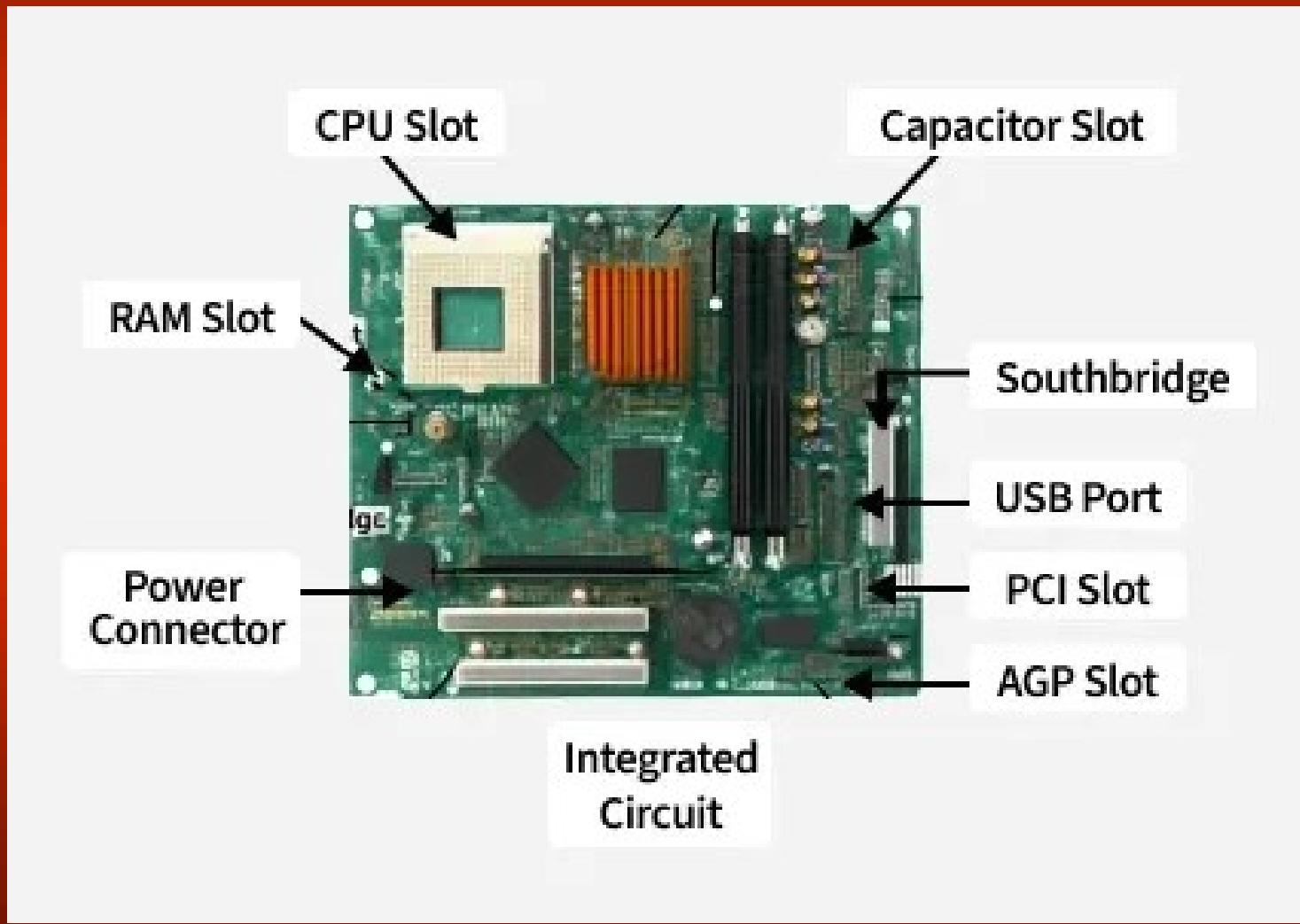
# The Motherboard



# **Importance of Motherboard**

- ◆ **Works like the nervous system of a computer**
- ◆ **Every part sends/receives signals through it**
- ◆ **Example: Keyboard → Motherboard → CPU → Screen**

# Real Motherboard Example



# What is a Port?

- ◆ Port = physical connection point for devices
- ◆ Located on back/front of system unit



# Common Ports

- ◆ **USB Port** → **Keyboard, mouse, flash drive**
- ◆ **HDMI Port** → **Monitor / TV**
- ◆ **VGA Port** → **Older monitors/projectors**
- ◆ **Ethernet Port** → **Internet connection**
- ◆ **Audio Port** → **Speakers, headphones, mic**
- ◆ **SD Slot** → **Memory card reader**

# Identify Ports

- ☞ **Look at your laptop/mobile:**
  - ◆ **How many USB ports?**
  - ◆ **Do you see HDMI or VGA?**
  - ◆ **Where do you connect headphones?**

# Cables

- ◆ Used to connect devices
- ◆ Can carry power or data
- ◆ Internal or external



# Internal Cables

- ◆ **SATA Cable** → connects HDD/SSD
- ◆ **Power Cable** → PSU to motherboard & drives



# External Cables

- ◆ **USB Cable** → mouse, keyboard, phone
- ◆ **HDMI Cable** → display
- ◆ **Charging Cable** → laptop/mobile

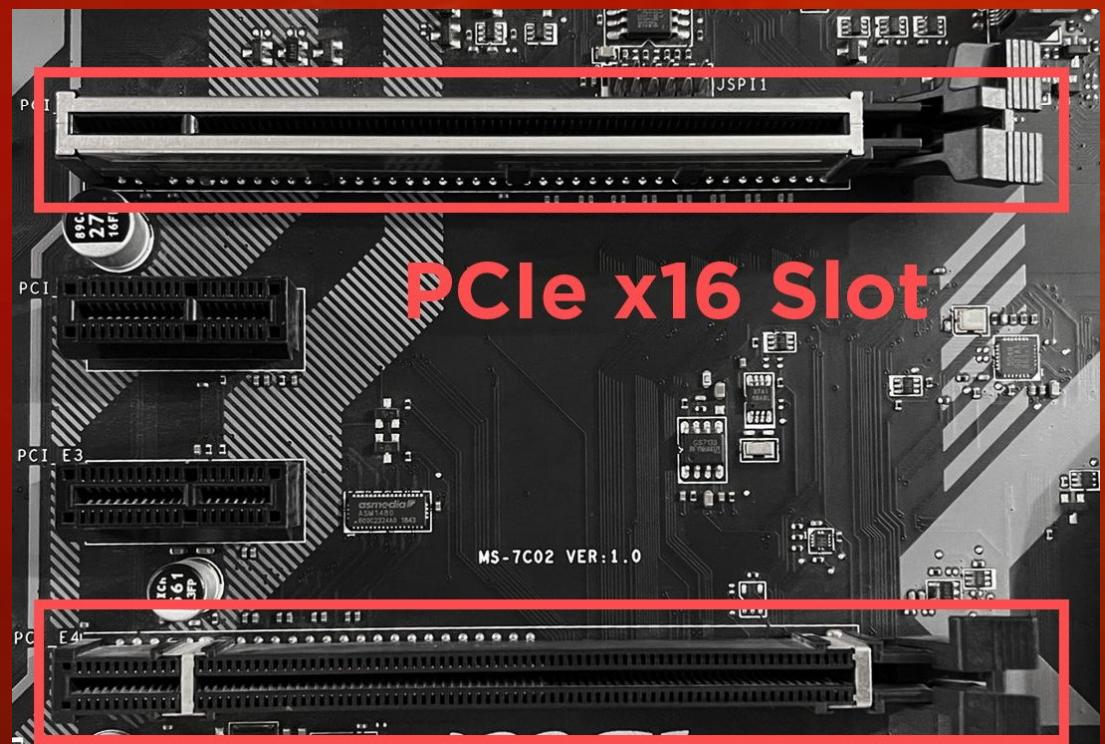
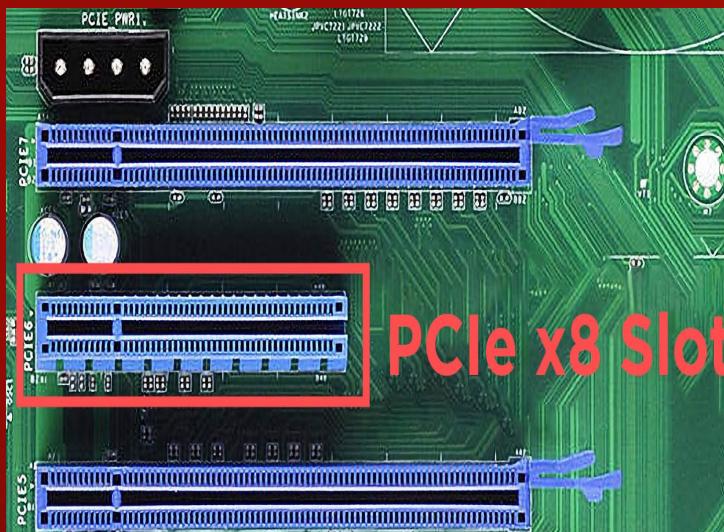
# Expansion Slots

- ◆ Empty connector on motherboard
- ◆ Used to add extra cards



# Type of Expansion Slots

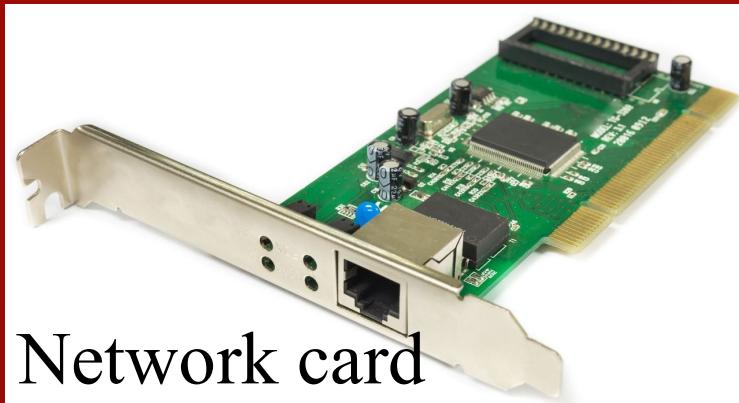
- ◆ PCI (older standard)
- ◆ PCI Express (PCIe) (modern)
- ◆ Express Card (notebooks)



# Expansion Cards

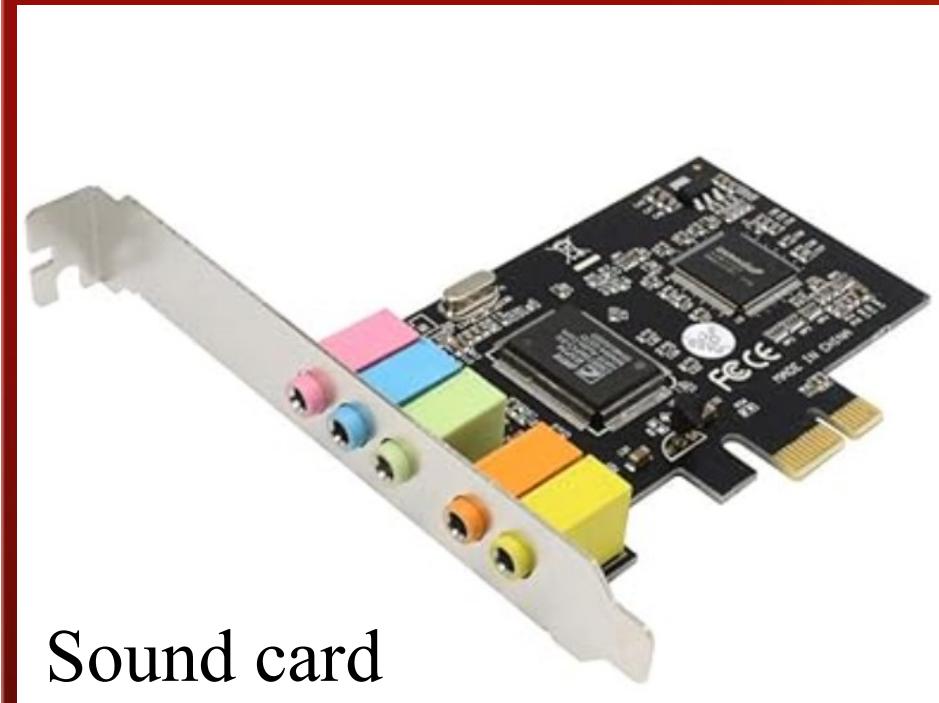
- ◆ Circuit board that goes into slot
- ◆ Adds new functions to computer

# Type of Expansion Cards



Network card

Wireless  
Network cards



Sound card

Graphics card



# Summary

- ◆ Inside System Unit
  - Ports & Cables
  - Expansion Cards and Slots

# Suggested Reading

- ◆ Ch-02, The System Unit: Processing and Memory , “Understanding Computers: Today and Tomorrow, Comprehensive”, 15th Edition by Deborah Morley & Charles S. Parker
- ◆ Ch-04, Discovering Computers Fundamentals- Your Interactive Guide -- Gary B Shelly; Misty E Vermaat; Jeffrey J Q