

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

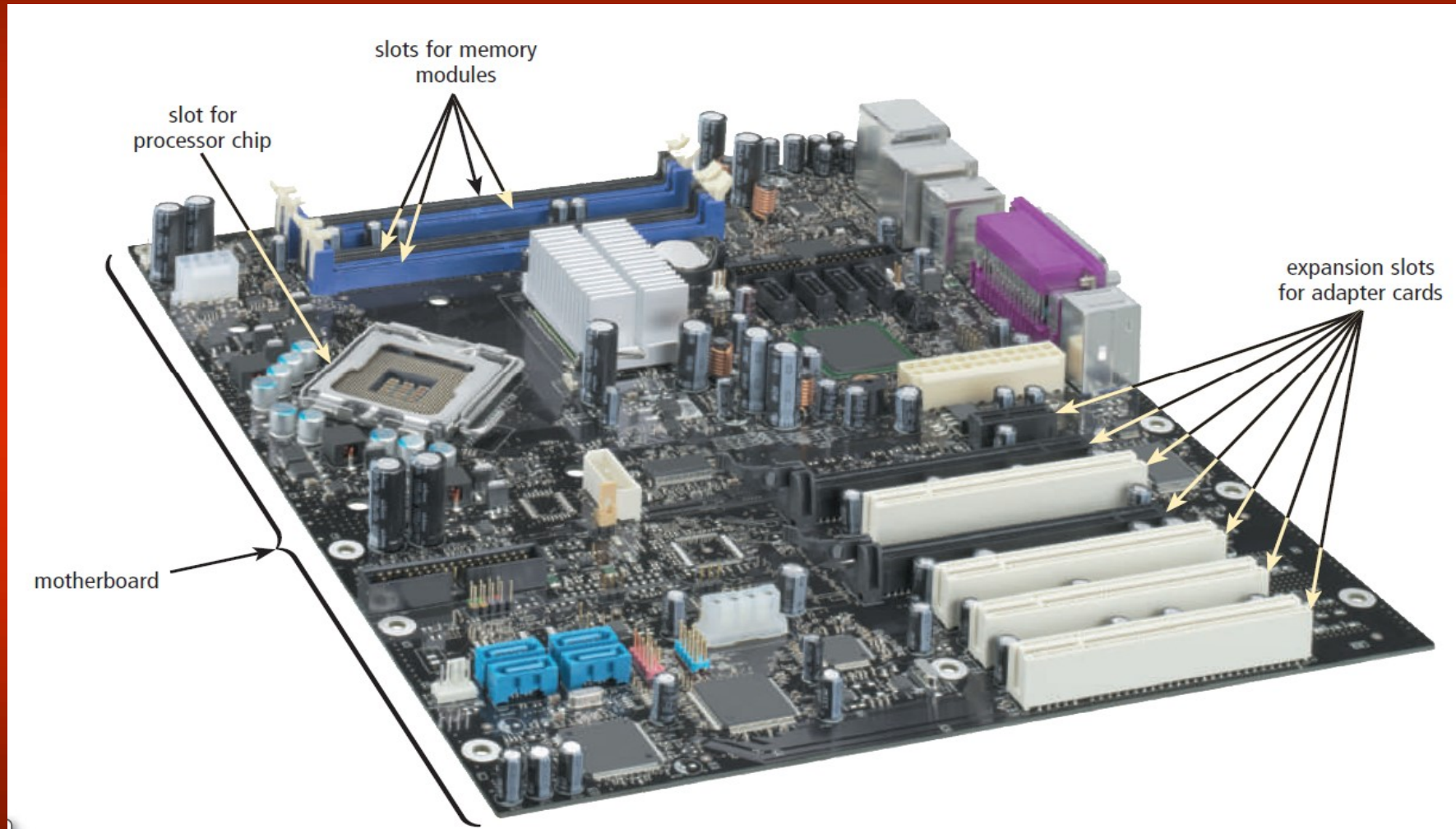
Overview of Lecture 5

- ◆ 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.**

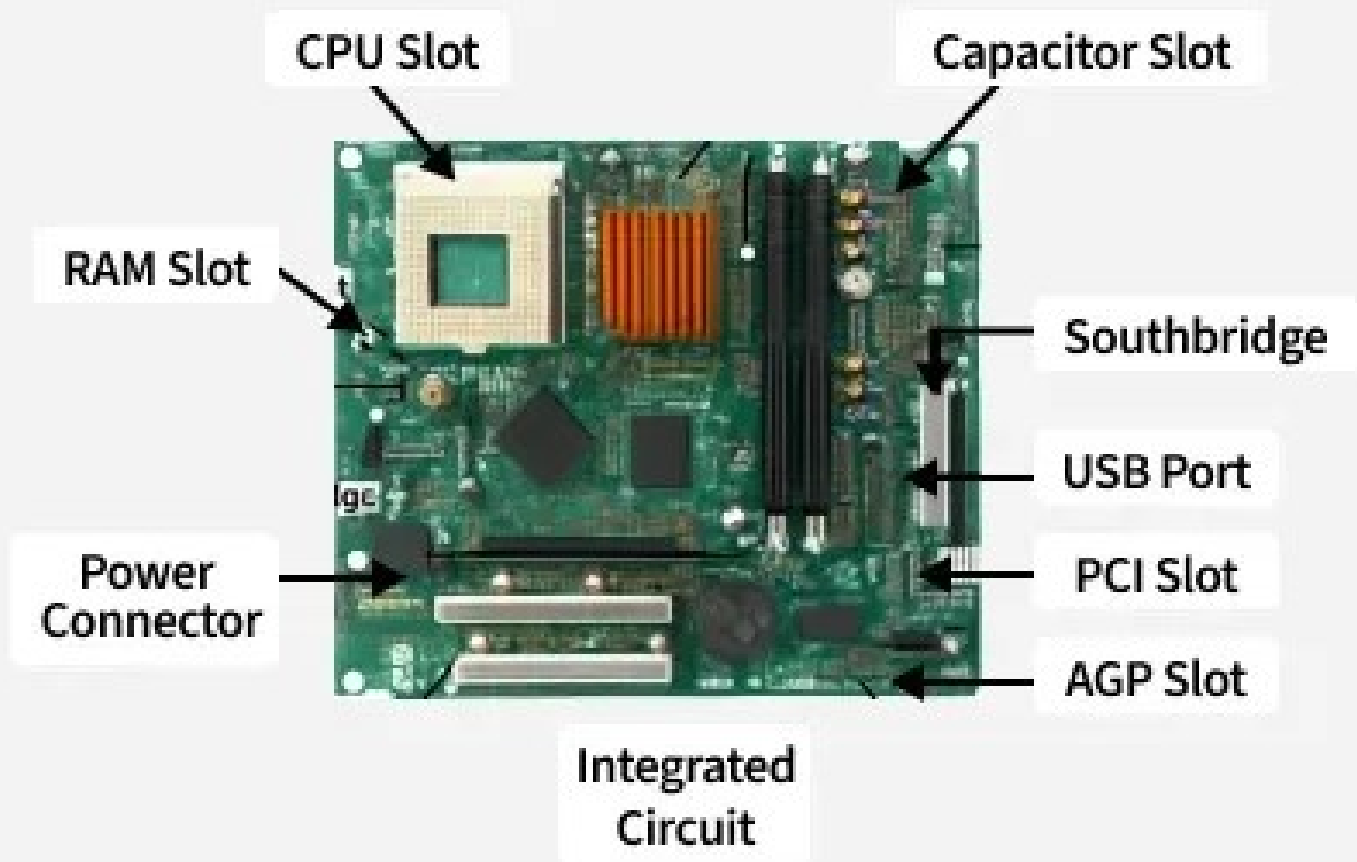
The Motherboard



Importance of Motherboard

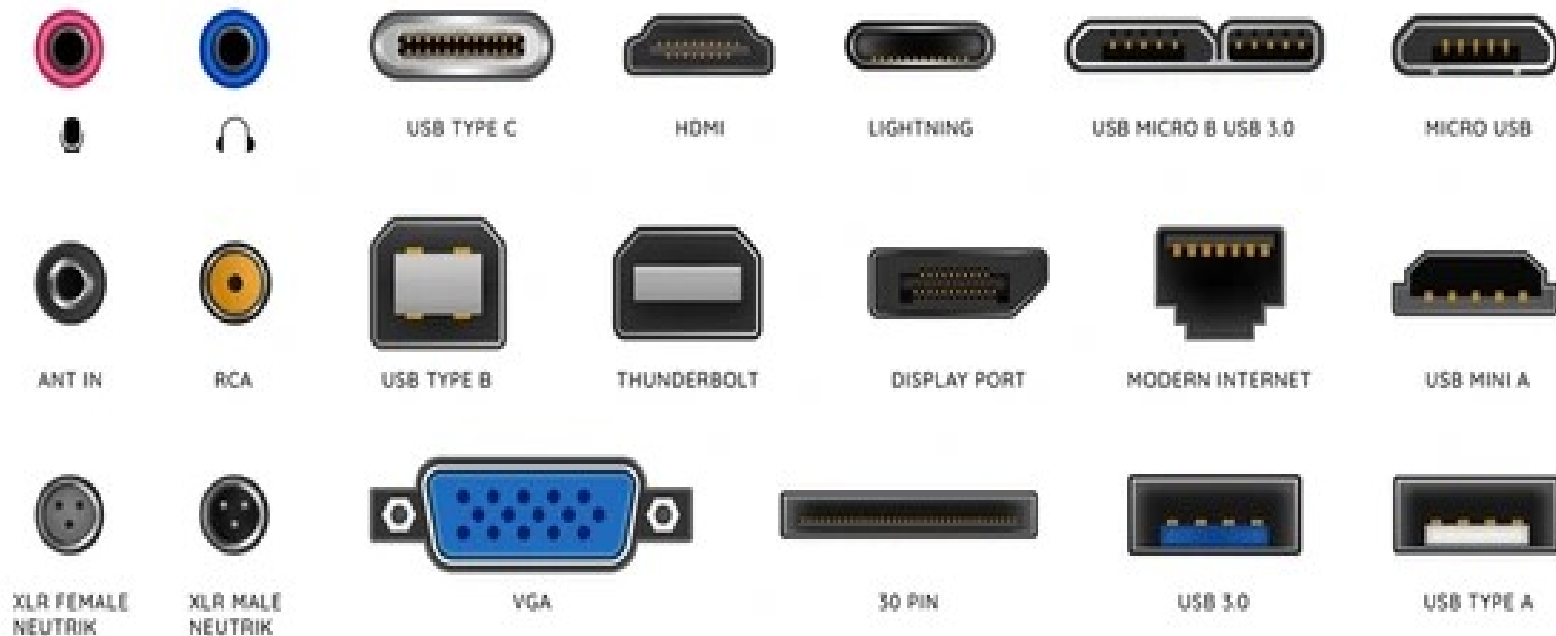
- ◆ Works like the nervous system of a computer
- ◆ Every part sends/receives signals through it
- ◆ Example: Keyboard → Motherboard → CPU → Screen

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

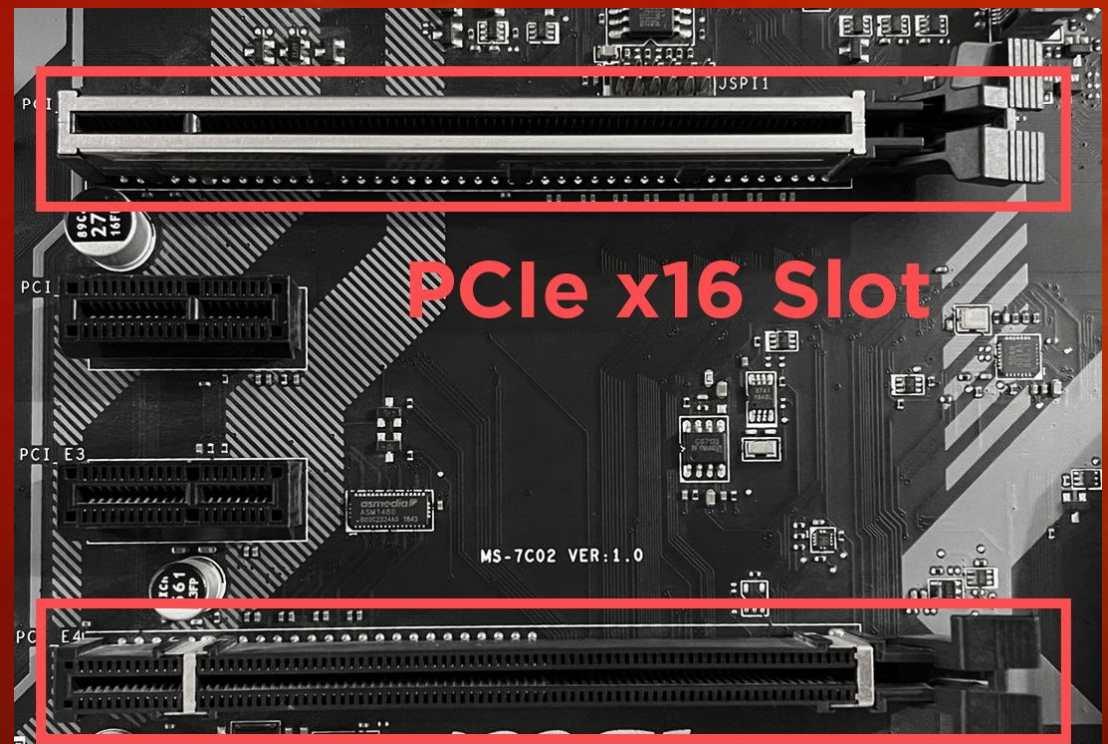
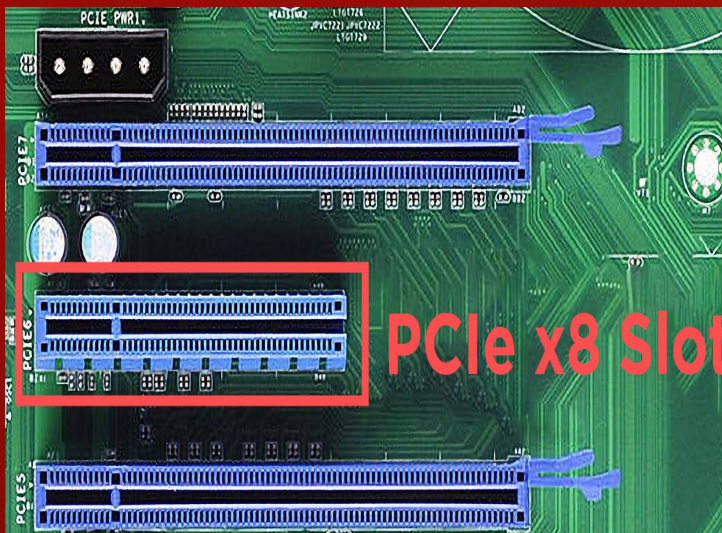
Expansion Slots

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



Type of Expansion Slots

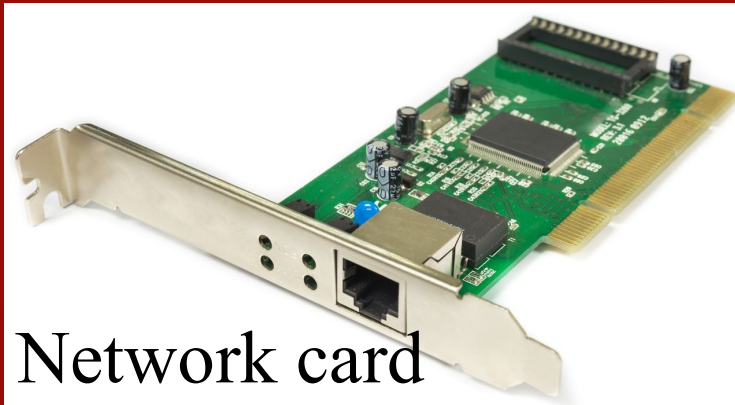
- ◆ PCI (older standard)
- ◆ PCI Express (PCIe) (modern)
- ◆ Express Card (notebooks)



Expansion Cards

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

Type of Expansion Cards

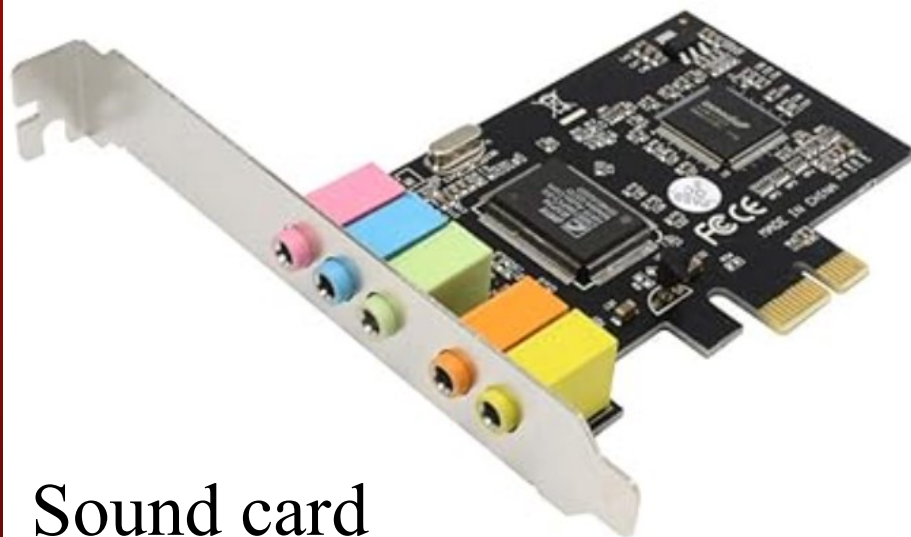


Network card

Wireless Network cards



Graphics card



Sound 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