Lecture: Tools of ICT & Computer Systems

By: Lecturer CS

Tools of ICT

- 1. Computer System
- 2. Mobile System
- 3. Satellite System
- 4. Radio System

A COMPUTER SYSTEM

System Unit

Monitor

Webcam

Printer

Speakers

Keyboard

Mouse

Flash Drive

Tools of ICT→ Computer System

- A computer system is the **central tool of ICT**, combining hardware (physical parts) and software (programs and applications).
- It allows **data input, storage, processing, and output**, which forms the backbone of all ICT services.
- Examples:
  - **Personal computers (PCs):** Used by individuals for office, study, and entertainment.
  - **Servers:** Used by organizations to manage websites, emails, and databases.
  - **Supercomputers:** Used in advanced research like space missions, artificial intelligence, and climate prediction.
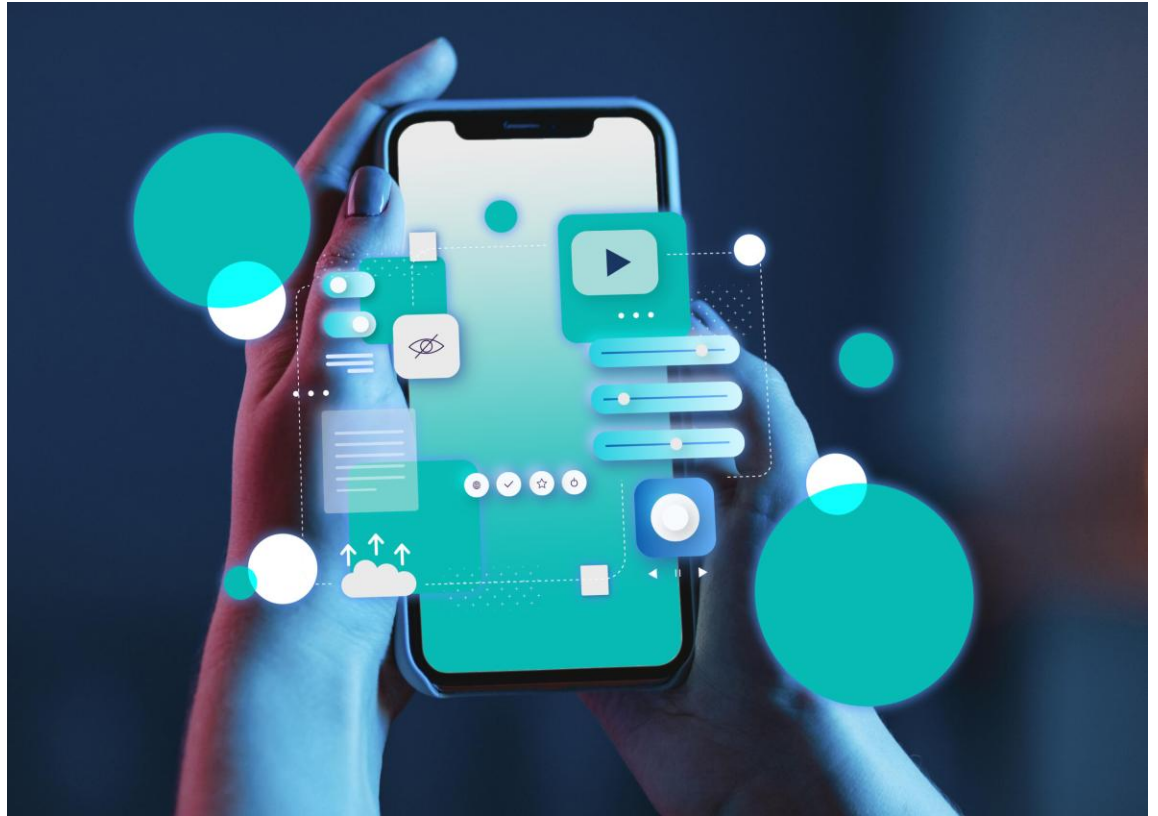
Server

Super Computer

Tools of ICT➔ Mobile System

- Mobile systems are **portable ICT devices** like smartphones, tablets, and laptops.
- They support **wireless communication**, making ICT available on the go.
- **Importance:**
  - **Communication:** Calls, messaging, video conferencing (WhatsApp, Zoom, MS Teams).
  - **Education:** E-learning apps (Google Classroom, Khan Academy).
  - **Business:** Mobile banking, digital payments, online marketing.
  - **Entertainment:** Games, music, movies, and social media.
- **Example:** Students can attend online classes and submit assignments from anywhere using a smartphone.
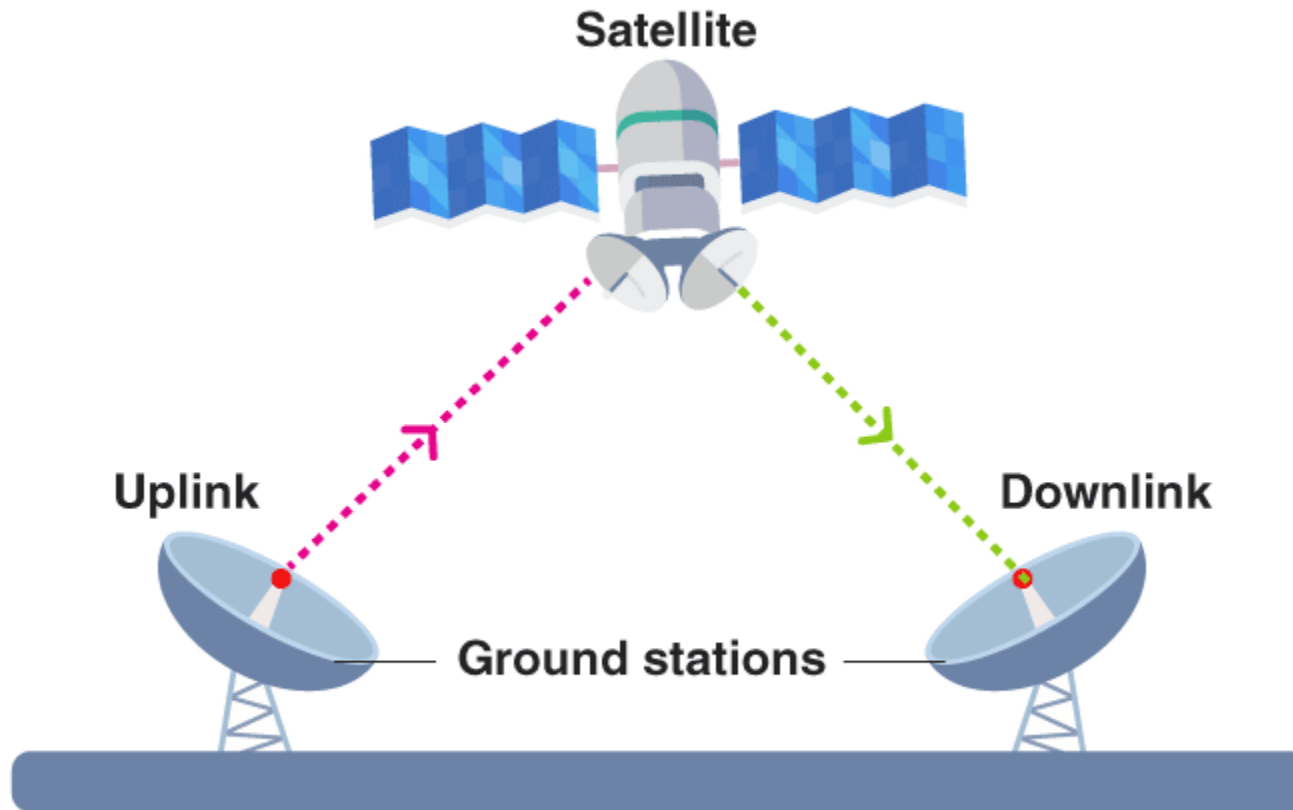
Tools of ICT→ Mobile System
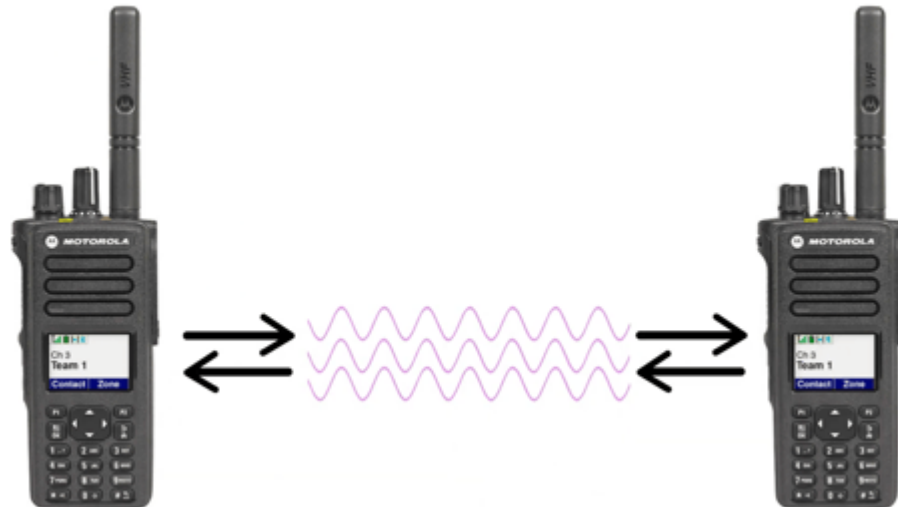
Tools of ICT→ Satellite System

- Satellites are devices in space that transmit signals for global communication.
- **Key roles in ICT:**
  - **Telecommunication:** Internet, TV, and telephone networks.
  - **Navigation:** GPS systems for travel, aviation, shipping.
  - **Weather Forecasting:** Helps predict storms, floods, and climate changes.
  - **Disaster Management:** Provides communication in areas where normal infrastructure is destroyed (e.g., after earthquakes).
- **Example:** During floods in Pakistan, satellite communication helped in rescue operations.

Tools of ICT→ Satellite System

Tools of ICT→ Radio System

- One of the **oldest ICT tools**, still important in the modern world.

- Radio system utilizes radio waves to transmit and receive information, enabling various forms of communication like broadcasting, two-way communication, and wireless data transmission.

Tools of ICT→ Radio System

- **Uses:**
- Broadcasting news, sports, and educational programs.
- Emergency communication in remote or rural areas.
- Radio-based education (used in distance learning in many developing countries).
- Military communication.
- **Example:** In rural villages, farmers still rely on radio for weather and crop information

1. Introducing to the World of Computers

a) Computers in Your Life

b) What is a Computer and What Does it Do?

c) Computer Users and Professionals

a) Computers in Your Life

- **At Home:** Online shopping, internet browsing, smart home devices (e.g., washing machines with embedded systems).

- **In Education:** Online classes, digital libraries, e-learning tools, virtual labs.

- **In Jobs/Offices:** Word processing, presentations, data analysis, office automation.

- **On the Go:** Cloud storage (Google Drive, OneDrive), mobile computing, GPS navigation.

b) What is a Computer and What Does it Do?

- - Electronic device that accepts input, processes data, stores info, produces output

- - Basic Functions: Input → Process → Storage → Output

- - Example: Online exams (Input answers → Process → Store → Display results)

c) Computer Users and Professionals

- **End Users (Consumers):** Students, teachers, office workers, etc.
- **IT Professionals:**
  - **Programmers:** Develop software.
  - **Network Engineers:** Manage communication networks.
  - **Database Administrators:** Manage large sets of data.
  - **Cybersecurity Experts:** Protect systems from attacks.
- **Specialists:** Data scientists, AI engineers, cloud specialists.

d) Computers to Fit Every Need

- **Embedded Computers** – Small computers built inside devices (microwave ovens, cars, washing machines).
- **Mobile Computers** – Smartphones, tablets, laptops for portable computing.
- **Personal Computers (PCs):** Used by individuals for education, entertainment, and work.
- **Servers:** Provide resources to multiple users (web hosting, cloud storage).
- **Mainframes:** Large computers for banks, airlines, government offices.
- **Supercomputers:** Extremely powerful, used in research labs, weather forecasting, nuclear simulations.

Class Activity

- Discussion: Which ICT tool do you use most daily and why?
- Quick Quiz:
- 1. Difference between supercomputer & mainframe
- 2. Example of embedded system
- 3. How satellites help in disaster management?
- 4. Two roles of IT professionals

Conclusion

- **Conclusion**
- ICT tools such as **computers, mobiles, satellites, and radios** have transformed our world by connecting people, enabling learning, and supporting industries.
- **Computers** come in many forms – from small embedded chips to powerful supercomputers – and they play a critical role in every part of life.
- Future careers will require a strong understanding of ICT and computer systems.

Assignment # 1

- Make a comprehensive report on classification of Computers according to size.
  - Micro computers
  - Mini Computers
  - Mainframe Computers
  - Super Computers

  - Submit on the Google Classroom.
  - Deadline: 27th August 2025 not later than 11:59PM