

Title: Introduction to Computer Science

Chapter 1: Basics of Computers

Definition:

A computer is an electronic device that processes data.

Components:

CPU (Central Processing Unit)

Memory (RAM, ROM)

Storage devices (HDD, SSD)

Input/Output devices (keyboard, mouse, monitor)

Binary System:

Computers use 0 and 1 to represent data.

Chapter 2: Programming Fundamentals

Definition:

Programming is writing instructions for a computer.

Languages:

Python

Java

C++

Control Structures:

Conditional statements (if, else)

Loops (for, while)

Data Structures:

Arrays

Lists

Dictionaries

Chapter 3: Algorithms

Definition:

A step-by-step procedure for solving problems.

Examples:

Sorting (Bubble Sort, Quick Sort)

Searching (Linear Search, Binary Search)

Big O Notation:

Used to measure algorithm efficiency.

Chapter 4: Computer Networks

Definition:

Connecting multiple computers to share resources.

Topologies:

Star

Ring

Mesh

Bus

Protocols:

HTTP

TCP/IP

FTP

Internet:

A global network connecting millions of devices.

Summary:

Computers are electronic devices that process data.

Programming allows humans to give instructions to computers.

Algorithms help solve problems efficiently.

Networks connect computers and enable communication.