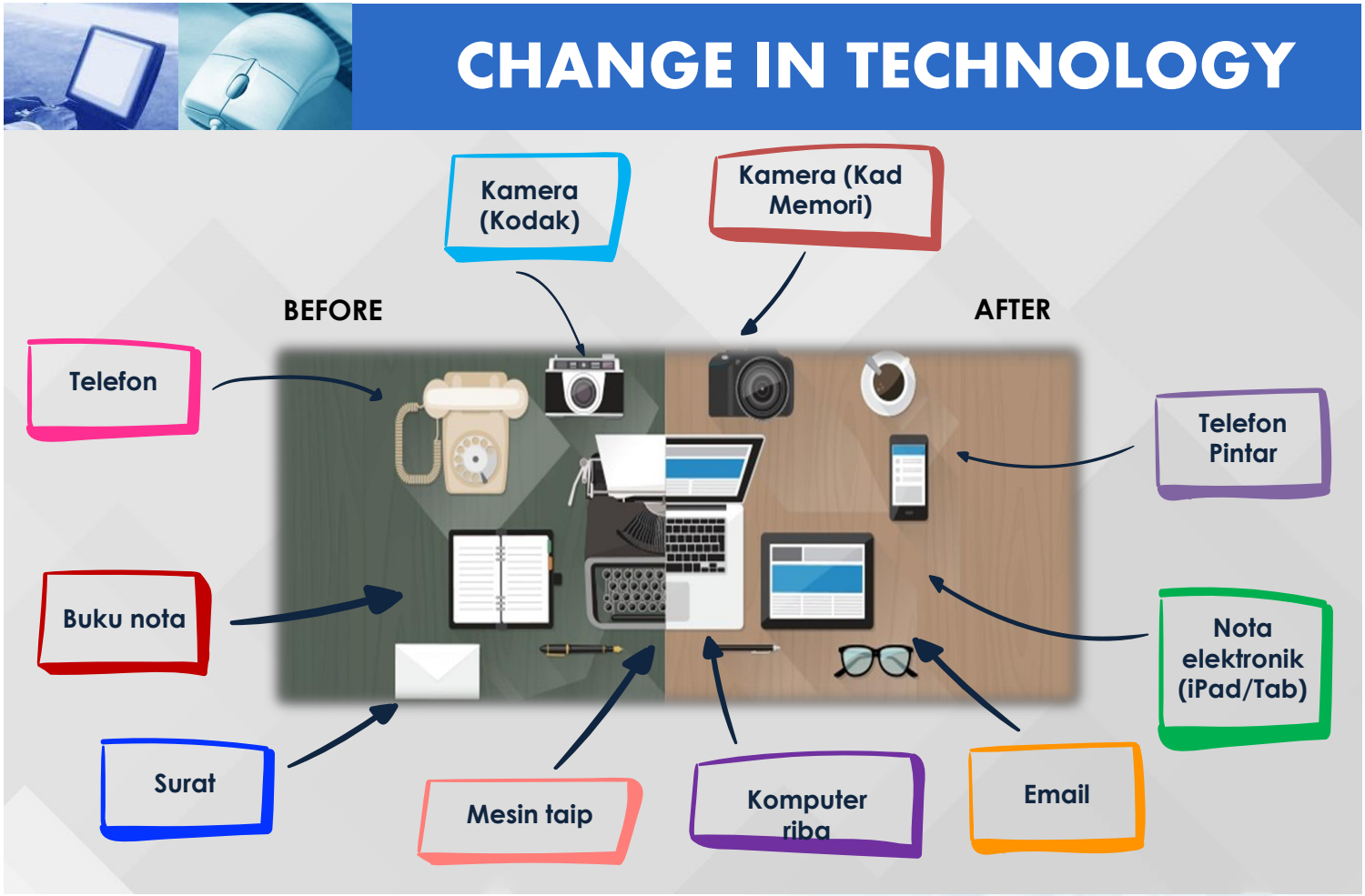




Chapter 1

INTRODUCTION TO INFORMATION TECHNOLOGY

CHANGE IN TECHNOLOGY

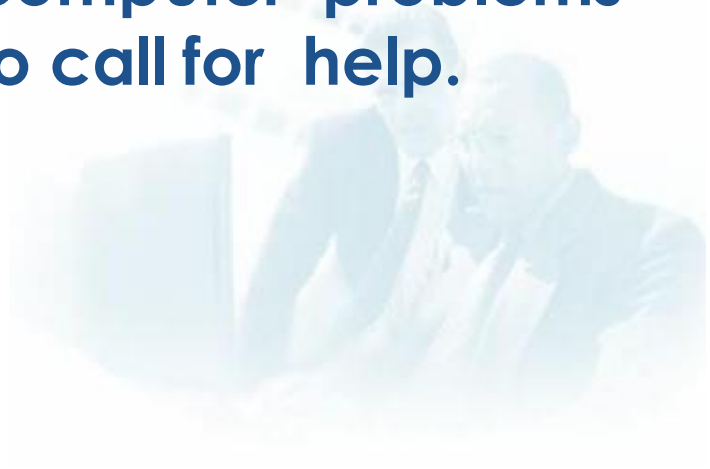




BEING TECHNOLOGY SAVVY

Being *computer savvy means knowing what computers can do and* what they can't, knowing how they can benefit you and how they can harm you, knowing when you can solve computer problems and when you have to call for help.

By Willaim/Sawyer





INFORMATION AND TECHNOLOGY

- *Information technology (IT) is a general term* that describes any technology that helps to produce, manipulate, store, communicate, and/or disseminate information
- IT merges computing with high-speed communications links carrying data, sound, and video.
- Examples
  - Telephones
  - Televisions
  - Appliances
  - Various handheld devices





INFORMATION AND TECHNOLOGY

- Two different parts of information technology
  - Computer Technology
    - Programmable, multiuse machine that accepts data—raw facts and figures—and processes, or manipulates, it into information we can use
  - Communication Technology
    - Also called t*elecommunications technology , consists of electromagnetic devices and* systems for communicating over long distances



INFORMATION AND TECHNOLOGY

- Using a computer or some other information device, connected through a network, to access information and services from another computer or information device
- A *network is a communications system connecting* two or more computers; the internet is the largest such network



INFORMATION AND TECHNOLOGY

- *How is information technology being used in education?*
  - E-mail
  - Course Management Sofwtares
  - Distance Learning
  - Avatars
- *How are computers being used in health and medicine?*
  - Telemedicine
  - Robots





INFORMATION AND TECHNOLOGY

- How will computers affect my financial matters?
  - Virtual Money
  - Micro-Credits
  - Micro-Payments
- How will my leisure activities be affected by information technology?
  - Satellite Television
  - Online Television



INFORMATION AND TECHNOLOGY

- In what ways are computers changing government and politics?
  - Connection with Voters
    - Tabdeeli Razakar
  - Electronic Polling
  - Three Step Balloting
  - Online Public Complaints



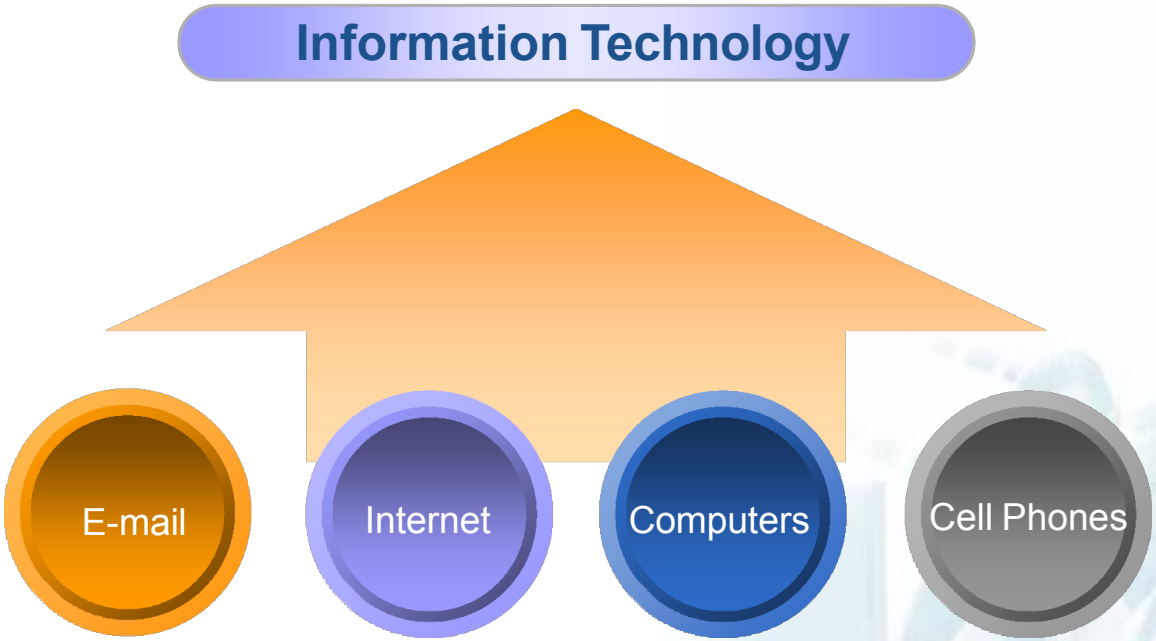


INFORMATION AND TECHNOLOGY

- How could I use computers to advance my career?
  - Hotel Management
  - Law and Enforcement
  - Hospital Management
  - Entertainment
  - Education
  - Small and Medium Size Enterprises
  - Large Industries



PERVASIVE INFORMATION TECHNOLOGY





INTERNET, WORLD WIDE WEB AND CYBERSPACE

- *Cyberspace* encompasses not only the online world and the internet in particular but also the whole wired and wireless world of communications in general
- Internet is a worldwide computer network that connects hundreds of thousands of smaller networks. These networks link educational, commercial, nonprofit, and military entities, as well as individuals
- World Wide Web often called simply the –Webll or the –webll—an interconnected system of internet computers (called *servers) that* support specially formatted documents in multimedia form



CATEGORIES OF COMPUTERS

- Computers are divided into five different categories:
  - Super Computers
    - high-capacity machines with thousands of processors that can perform more than several trillion calculations per second
  - Mainframes
    - Water- or air-cooled computers that cost $5,000–$5 million and vary in size from small, to medium, to large, depending on their use



CATEGORIES OF COMPUTERS

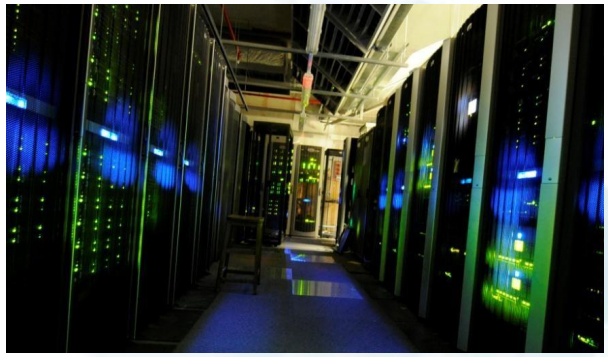
- Computers are divided into five different categories:
  - Work Stations
    - Expensive, powerful personal computers usually used for complex scientific, mathematical, and engineering calculations and for computer-aided design and computer-aided manufacturing
  - Microcomputers
    - Also called *personal computers (PCs), which cost $500* to over $5,000, can fit next to a desk or on a desktop or can be carried around
  - Microcontrollers
    - Also called *embedded computers , are the tiny, specialized* microprocessors installed in –smartll appliances and automobiles.



CATEGORIES OF COMPUTERS

- A *server , or network server , is a central computer that holds collections* of data (databases) and programs for connecting or supplying services to PCs, workstations, and other devices, which are called *clients. These* clients are linked by a wired or wireless network. The entire network is called a *client/server network*







CONCEPTS RELATED TO COMPUTERS

- What is the purpose of computer?
  - The purpose of a computer is to process data into information
    - Data consists of the raw facts and figures that are processed into information
    - Information is data that has been summarized or otherwise manipulated for use in decision making
  - Hardware and Software
    - Hardware consists of all the machinery and equipment in a computer system
    - Software , or programs , consists of all the electronic instructions that tell the computer how to perform a task



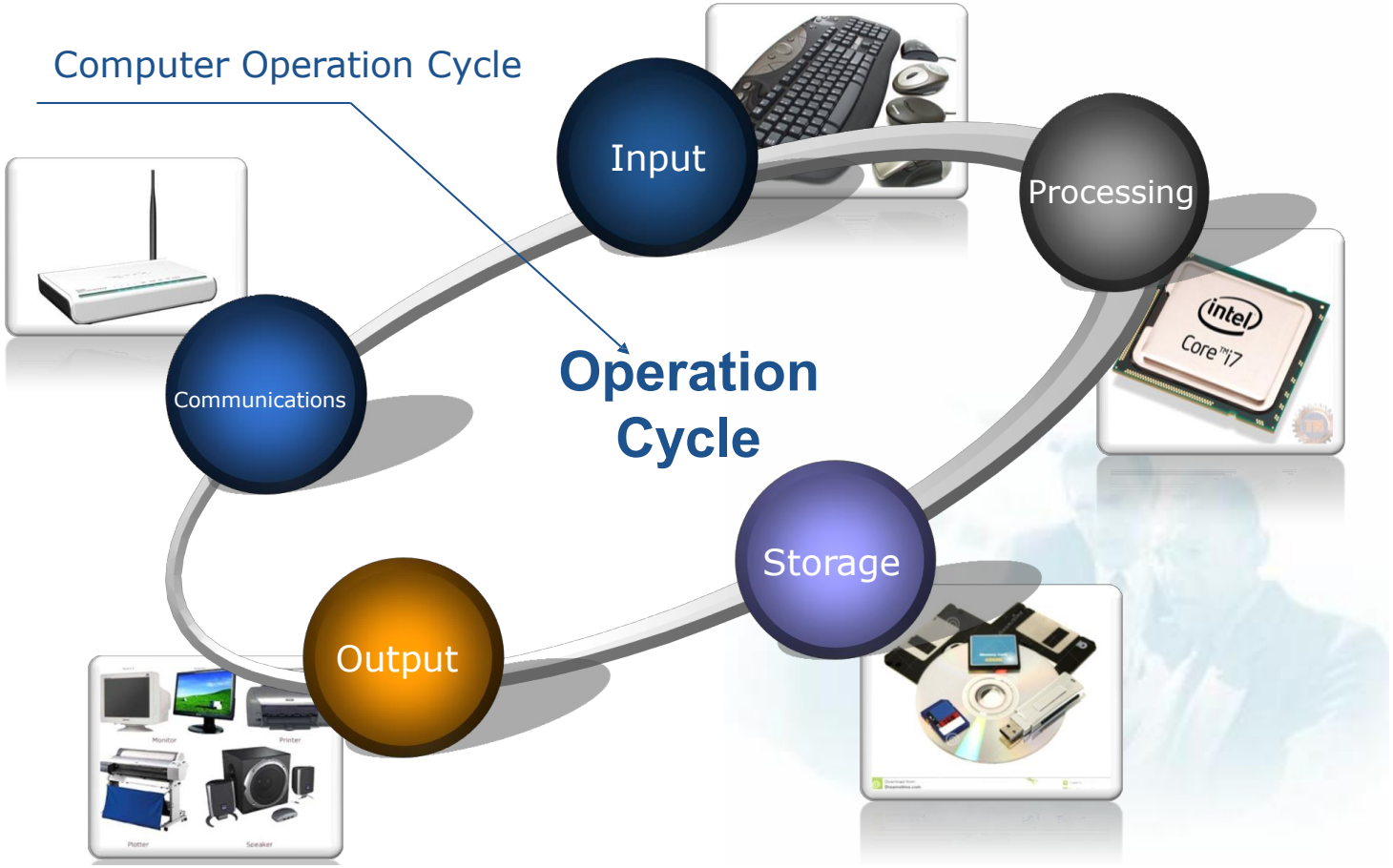
CONCEPTS RELATED TO COMPUTERS

- What is the purpose of computer?
  - Basic operation of a computer
    - **Input operation**
    - **Processing operation**
    - **Storage operation**
    - **Output operation**
    - **Communications operation**





OPERATION CYCLE OF COMPUTER





DEVICES OF A COMPUTER

- Input Hardware
  - A *keyboard is an input device that converts letters, numbers,* and other characters into electrical signals readable by the processor
  - A *mouse is a non-keyboard input device ("pointing* device‖) that is used to manipulate objects viewed on the computer display screen



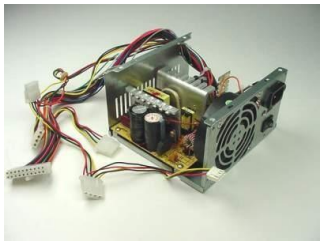




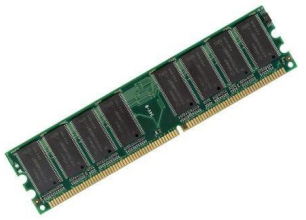


DEVICES OF A COMPUTER

- Processing and Memory Hardware
  - System Case and Power Supply
  - *Processor chip (CPU, for central processing unit) is a tiny piece of silicon that contains millions of miniature* electronic circuits
  - Memory Chip also known as *RAM (random access memory) chips , represent primary storage, or temporary storage*









DEVICES OF A COMPUTER

- Processing and Memory Hardware
  - Motherboard is the main circuit board in the computer
  - *Expansion slots —for expanding the PC's capabilities*—which give you places to plug in additional circuit boards





DEVICES OF A COMPUTER

- Storage Hardware
  - A *hard-disk drive* is a storage device that stores billions of characters of data on a non- removable disk platter
  - *CD (compact-disk) drive , or its* more recent variant, a *DVD (digital video-disk) drive , is a* storage device that uses laser technology to read data from optical disks

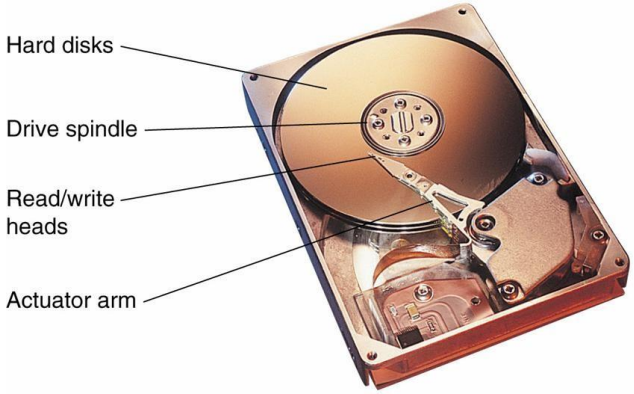


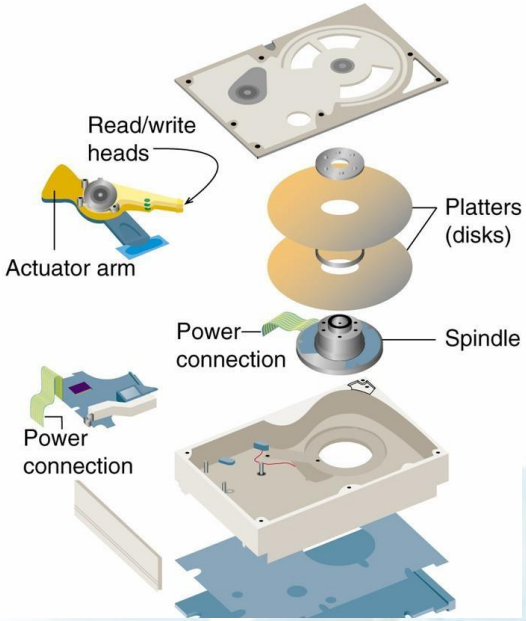






DEVICES OF COMPUTER







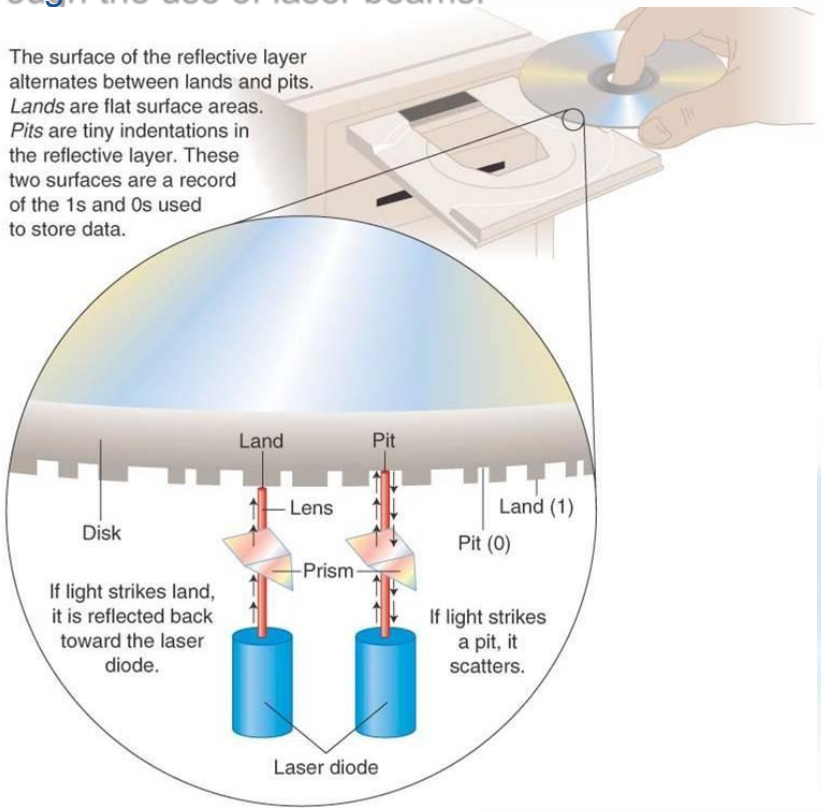
Bits on disk (through microscope)

dark stripes are 0 bits and bright stripes are 1 bits



DEVICES OF A COMPUTER

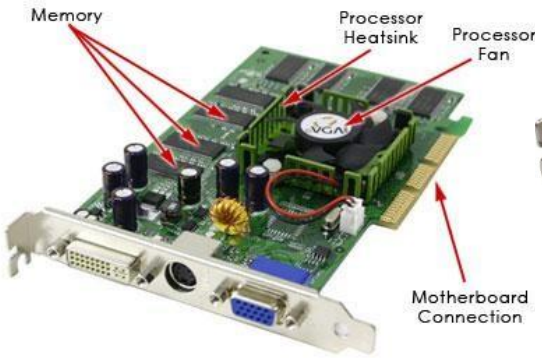
Optical Disk: a removable disk on which data is written and read through the use of laser beams.





DEVICES OF A COMPUTER

- Output Hardware
  - *Video card* converts the processor's output information into a video signal that can be sent through a cable to the monitor
  - *Sound card , which enhances the computer's sound generating* capabilities by allowing sound to be output through speakers







DEVICES OF A COMPUTER

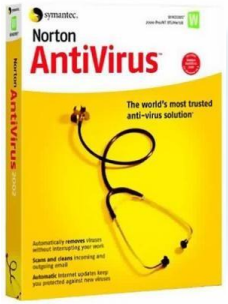
- Output Hardware
  - *Monitor* is the display device that takes the electrical signals from the video card and forms an image using points of colored light on the screen
  - *Speakers are the devices that play sounds* transmitted as electrical signals from the sound card
  - Printer , an output device that produces text and graphics on paper



COMPUTER SOFTWARE

- Software
  - *System software* helps the computer perform essential operating tasks and enables the application software to run
  - Application software enables you to perform specific tasks—solve problems, perform work, or entertain yourself











Thank You

INTRODUCTION TO INFORMATION TECHNOLOGY