

Unit one

Information system

1.1 *General concepts of Information Systems*

Computer?

Is an electronic device that can:_

- *accept,*
- *store and*
- *process data*

under the control of a set of instructions. Called program/software

Information System?

- *A system is a set of related parts.*
- *They operate together to perform a specific function.*
- *Information systems are assembled from parts, or components.*

Applications of ICT

ICT has a large number of applications.

1) Home

When your computer is connected to:-

- ❖ CD-ROM drive,
- ❖ encyclopedic information,
- ❖ movies and
- ❖ animations are directly available

When your computer is connected to the phone line, you can visit :-

- ❖ your community
- ❖ or other parts of the world.

Using the World Wide Web at your home you can:_

- ✓ work assignments,
- ✓ exchange e-mail,
- ✓ join special interest groups,
- ✓ download files,
- ✓ play games, & etc.

2) Office

With out computer there is no modern office.

The ICTs are integrated into offices in the following ways:

- Transaction processing
- Home-based workers
- Desktop publishing
- Financial analysis
- Product design
- Architectural walk-through
- Factories etc.

Continuous.....

3) Factory

ICTs have a major impact in industries where products are:-

- Designed and
- Manufactured

Computer-Aided Design (CAD)

- used to design and develop products.

Computer-Aided Manufacturing (CAM)

-used to manufacture designed and developed products.

-Computers are also used to assemble and test products and their components.

4) Transport

In the transport sector, ICT applications are used to improve:-

- ✓ road,
- ✓ air and
- ✓ rail transportation.

5) Communications

- This has been one of the most recognized uses of the ICTs.
- Satellites are commonly used in ICTs.

6) Education/Training

- The education sector is possibly one major area in which ICTs are playing a remarkable role.
- It enables improves education sector through Internet.

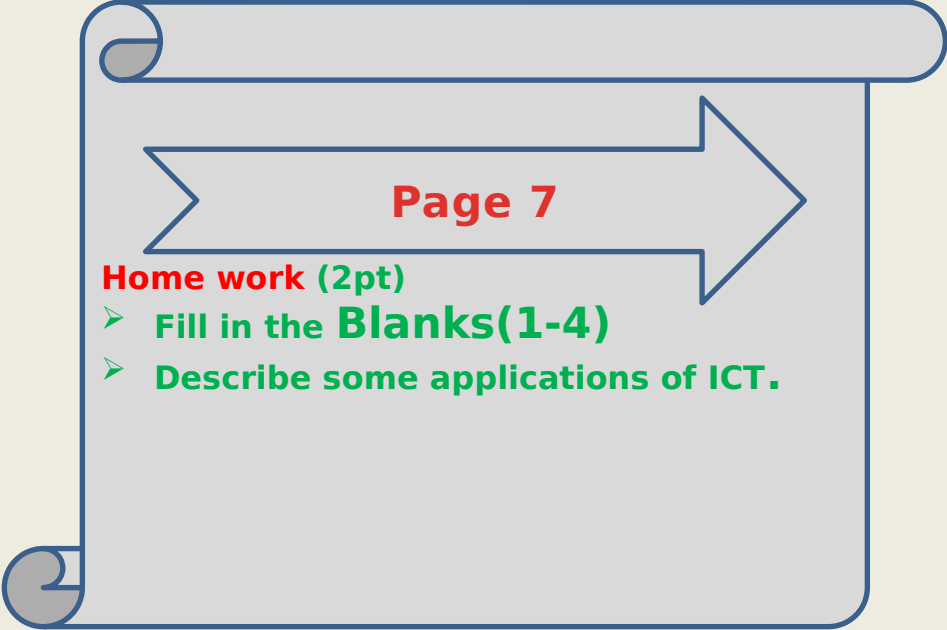
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7) Health

- ❖ ICTs are widely used in the field of medicine.
- ❖ They support efficient exchange of information between health professionals.
- ❖ physicians use ICT to understand the human body and to diagnose disorders.
- ❖ The computer controlled laser machines are used in surgery.
- ❖ The complex surgeries can be performed by smallest possible cuts on the patient body.
- ❖ This is done by operating through a technique, called **Endoscopy**.
- ❖ The ICTs are also helpful in training doctors for surgery.
- ❖ The surgeries can be performed on computer controlled models.

Key Concepts

- A system is a set of related parts that operate together to perform a specific function.
- Information systems have not yet gotten to the point where they can think, plan, and react to changing
- circumstances. So, people work on information systems.
- The vast majority of end-users use computers in their own fields of interest.
- Some applications of ICT are at:-
 1. Home,
 2. Office,
 3. Factory,
 - 4 Transport,
 5. Communications,
 6. Education/Training and
 7. Health



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Home work (2pt)

- Fill in the **Blanks(1-4)**
- Describe some applications of ICT.

1.2 Types of Information system in the Organization

- 'system' is derived from the Greek word '**systema**'
- **Systema**:-means an organized
 - ✓ relationship among functioning units or components.
 - ✓ A system is an orderly arrangement of its components.
 - ✓ The components of a system have structure and order.

Characteristics of system

1. Components

- A system is made up of components.
- A component is either an irreducible part or an aggregate of parts,
- Those an irreducible & aggregate parts are also known as subsystem
- The simple concept of a **component** is very powerful.

Continuous.....

2. Interrelated components

B/c the function of one component is somehow tied to the functions of the other components.

3. A boundary

- Its function is separating the system from other systems.
- Components within the boundary of a system can be changed, whereas things outside the boundary cannot be changed.

4. A purpose

- All of the components work together to achieve some overall purpose for the larger system.

5. An environment

- A system exists within an environment.

Continuous.....

6. Interfaces

The points at which the system meets its environment
There are also interfaces between subsystems.

Special Functions of interfaces are:-

1. Security protecting
- 2 Filtering unwanted data
3. Coding and decoding incoming and outgoing messages
4. Detecting and correcting errors
5. Buffering,
6. Summarizing

Continuous.....

7. **Input**

- A system takes input from its environment in order to function.

8. **Output**

- Finally, a system returns output to its environment as a result to its functioning and thus achieves its purpose.

9. **Constraints**

- ❖ system must face constraints in its functioning.
- ❖ because there are limits (***in terms of capacity, speed, or capabilities***) to what it can do and how it can achieve its purpose within its environment.

Application of Information System Types.

The main purpose of a computer-based information system is to provide managers make decisions.

There are six types of computer-based information systems

1. *Transaction Processing Systems (TPSs)* – For lower managers.
2. *Management Information Systems (MISs)* For middle managers
3. *(DSSs)* – For middle managers for middle managers
4. *Executive Support Systems (ESSs)* – For top managers.
5. *Office Automation Systems (OASs)* For all levels, including non-management
6. *Expert Systems (ESs)* – For all levels, including non-management.

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Home work (2pt)

- **Fill in the Blanks(1-5)**
- **True or False (1-5)**

1.33.3 Impact of ICT in Everyday Life

The increasing use of technology in all aspects of society makes:-

- ❖ confident,
- ❖ creative and
- ❖ productive use of ICT an essential skill for life.

ICT can be used to :-

- ✓ find, - develop, and
- ✓ analyze - present information, as well as to model situations and solve problems.
- ✓ ICT enables rapid access to **ideas** and **experiences** from a wide range of **people**, **communities** and **cultures**, and allows pupils to **collaborate** and exchange **information** on a wide scale/internet

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What is a Digital Device?

- A digital device is a device that works with **discrete** numbers or **digits**.
- *Examples of* a digital devices are:-
 - ✓ Digital Cameras
 - ✓ MP3 Players
 - ✓ Mobile Chargers
 - ✓ Cell Phone & others.

Impact of Using Computers in Offices

- ✓ Computers are forever present in the offices.
- ✓ There are four main uses of computer
 - i. word processing
 - ii. Internet/communications
 - iiidigital video/audio composition, and
 - ivdesktop publishing.
- Office automation has become the term for :-
 - ✓ linking workstations,
 - ✓ printers,
 - ✓ database system, and
 - ✓ other tools by means of a local area network.

Continuous.....

Impact of Mobile Phones

- o Using mobile phones are the easiest and the simplest of the methods.
- o It enables to connected with others, and moreover they provide a sense of security.

Positive Effects of Cell Phones

- o Cell phones are a tool of convenience.
- o Having a cell phone now makes people reachable in almost any location as long as there is good reception.
- o Using cell phones can be makes individuals easier to **contact**.
- o ***There are some examples of Positive Effects of Cell Phones are:-***
 - i. Cost Options for all Customers
 - ii. Size
 - iii. Conducting Business
 - iv. Internet Access
 - v. Cameras

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Negative Impact of Mobile Phones

- a) *Spillover:*
- b) *Dangerous:*
- c) *Health:-* the phones emit can cause such problems as **cancer** and **Alzheimer's** disease from prolonged use.
- d) *Environment:*
- e) *Manners:*
- f) *Addiction*

Impact of Satellite Broadcasting

- Satellite technology plays an important role in communication globally.
- The speed of satellite transmission is **from 256 KBPS to 100 MBPS .**
- **Satellites** work by receiving and transmitting **radio** signals from one earth station to another.
- The Ethiopian government has proposed three primary network projects:
 1. A government network ('Woredanet')
 2. An education network ('Schoolnet')
 3. An agriculture network ('Agrinet').

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Differences between Information Poor and Information Rich Society

It is needless to say that we are now in the **Information Age**.

Information Age/Digital Divide :-separate the information rich and the information poor.

The **information rich** have good access to information—especially online.

The **information poor** do not have such access and are vulnerable to all kinds of pressures.

Key concepts the main topics are:-

- ✓ ICT enables rapid access to ideas and experiences from a wide range of people, communities and cultures, and allows pupils to collaborate and exchange information on a wide scale.
- ✓ A digital device is a device that works with discrete numbers or digits.
- ✓ Computer has brought many changes in employment, including changes to office equipment, office location,
- ✓ work schedules and the types of work people are seeking.
- ✓ Mobile phones are the easiest and the simplest of the methods to stay connected with others, and moreover they provide a sense of security.
- ✓ satellite technology plays an important role in communication globally.
- ✓ The Information Age/Digital Divide separate the information rich and the information poor.

Home work (2pt)

Fill in the Blanks1-4

Chapter two

❖ **Enhancing the use of software**



Software

Is refers to the **operating instructions** and **applications** that allow **computers** to process the

- numbers,
- Pictures
- sounds &
- text we enter into them

Some examples of application software are:

- Word Processing Software
- Presentation Software
- Spreadsheet Software
- Desktop Publishing Software
- Database Management Software & other

- Word processing software was ***originally designed*** as a replacement for the ***typewriter***.
- Word processing software can support :-
 - photos and drawings
 - mathematical calculations
 - text in table format & text in varying sizes
 - shapes, colors and etc.
- ***Creating a Document***
- Using MS-Word 2007, we can create a variety of documents such as memos & letters, reports & research papers, Brochures & announcements, newsletters & envelopes, labels, and much more.

To start Word

- Click Start → All Programs → Microsoft Office → Microsoft Office Word 2007

Editing and Formatting Documents

➤ **Editing includes:-**

- inserting, replacing,
- deleting text, using Undo and/or Redo and
- spell checking etc.
- **Formatting can include** tasks as
- changing the font; aligning and indenting text; changing line and paragraph spacing & etc.

☐ **Section Breaks**

- ❖ **Are independent parts** of the text.
- ❖ Can be formatted **independently**.
- ❖ Section breaks are used to create sections within your MS-Word document.
- ❖ There is no **keyboard shortcut** to insert a section break.

☐ **Mail Merge**

- ✓ You use mail merge when you want to create a set of documents.
- ✓ Each letter or label has the same kind of information

☐ **Header & Footer**

- ✓ Footer – the areas of top of document
- ✓ Header-the areas bottom of the document

Continuous.....

❑ **Presentation Software**

MS-PowerPoint allows users to create slide shows that can be viewed on the **computer** or **projected** onto a large screen.

- The shows can include:-

clipart, graphs and charts, photos, drawings, video clips, sound, and text.

❖ **To start PowerPoint 2007,**

- Click *Start* → *All Programs* → *Microsoft Office* → *Microsoft Office PowerPoint 2007* then *OK/Enter*

❑ **Spreadsheets /Ms-excell software**

- Spreadsheet software can be used for **both simple** and **complex** calculations.

❖ **Creating Workbooks**

- A document in MS-Excel is made of one or more worksheets.
- A document in Excel is called a workbook.
- A workbook is the group of worksheets that belong to the same document.

Continuous.....

❖ ***To start Excel 2007***

- Click Start → All Programs → Microsoft Office → Microsoft Office Excel 2007 then OK/Enter
- When you start MS-Excel, it directly creates a ***workbook*** for you.
- Each worksheet in Excel contains:-
 - ✓ 16,384 columns and
 - ✓ 1,048,576 rows.
- An Excel Workbook initially contains three worksheets labeled Sheet1, Sheet2, and Sheet3.
- At any time, you can create a new workbook.

❑ ***Publishing Software***

- Desktop publishing programs are used to create ***professional quality documents*** that combine ***text*** and other ***visual elements*** in non-linear arrangements.

❖ ***To start Publisher 2007,***

- Click Start → All Programs → Microsoft Office → Microsoft Office Publisher 2007

❑ **Database Management**

- Database software such as MS-Access 2007 is **designed** to ***keep track of information***.
- They allow you to rearrange it alphabetically, numerically, or chronologically.

❖ **Creating Database**

- A database is comprised of a **series** of objects used to
- enter,
- manage, and
- view data.

Continuous.....

❖ **To start Access 2007,**

- Click Start → All Programs → Microsoft Office → Microsoft Office Access 2007

❖ **Creating Queries and Forms**

Queries and **forms** are objects based on tables and are created to extract, view, and maintain data.

- **Queries** can be used to view **specific fields** from tables that meet **a specific criterion**.
- **Forms** provide a user-friendly interface for:-
entering, editing, deleting, and viewing records in tables.