

# COMPUTER STUDIES

FORM 3

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KAMUZU BARRACKS COMMUNITY DAY SECONDARY SCHOOL

## TYPES OF COMPUTERS

- Computers are generally grouped into **three** types according to the **type of data** they process.
- These **three** types are:
  - **Digital** computers
  - **Analog** computers
  - **Hybrid** computers

# TYPES OF COMPUTERS

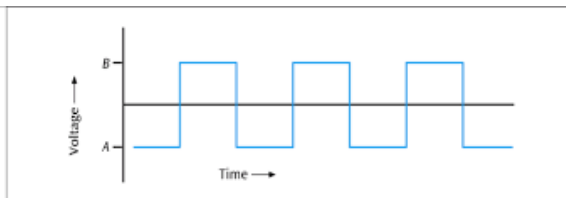
## Digital Computers

- These are computers that process data that is **discrete** in nature.
- Discrete data refers to numerical values which fall under integers or whole numbers.
- Discrete data is also known as digital data, and is usually represented using a two-state square waveform as shown in figure 1 below.
- **Note:** Apart from computers, most modern home appliances such as digital TV's, microwave, digital wall clocks and other electronic home appliances are digital in nature.

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# TYPES OF COMPUTERS

**Figure 2-3**  
A simple example of a  
digital waveform



**Figure 1:** Digital data Waveform

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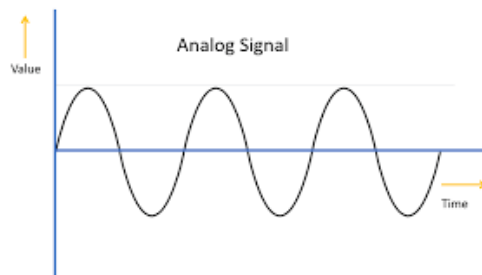
# TYPES OF COMPUTERS

## Analog Computers

- These computers that process data that is **continuous** in nature.
- Continuous data is also known as analog data.
- Continuous data refers to number values that fall under real numbers or fraction numbers.
- Analog computer are used in:
  - Manufacturing process control like monitoring and regulating furnace temperatures and pressures.
  - Weather stations, to record and process physical quantities like wind, cloud speed and temperature.
- Figure 2 below, shows analog data which is represented in a continuous waveform.

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# TYPES OF COMPUTERS



**Figure 2:** Analog data Waveform

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# TYPES OF COMPUTERS

## Hybrid Computers

- Hybrid computers are designed to process both analog and digital data.

## Comparison of digital and analog computers

- Digital computers are simpler to make (develop) than analog computers.
- Digital computers are more reliable than analog computers.
- Digital computers are smaller in size than analog computers of the same functionality.
- Digital computer consume less power than analog computers.

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# BASIC COMPONENTS OF A COMPUTER

Computers come in different sizes and designs but the most common computer is referred to as the **Personal Computer** (PC).

- PC's are mostly used in *offices, homes, schools, and business places*.
- A typical desktop computer (**which is an example of a PC**) is basically made up of a **system unit** and other devices called **peripheral devices**.
  - **Peripheral devices** can be defined as an internal or external devices that connect directly to a computer but **does not contribute** to the computer's primary function.
  - Examples of peripheral devices include: keyboard, mouse, printer, scanners, speakers etc.
- The most common PC has the following basic components as shown in figure 3 below:

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# BASIC COMPONENTS OF A COMPUTER



**Figure 3:** Basic components of a computer

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# BASIC COMPONENTS OF A COMPUTER

- The **System Unit** is the part that houses the brain - the microprocessor of the computer called the **Central Processing Unit** (CPU).
- The system unit also houses other devices called **drives**.
- Drives are used to store, record and read data. Examples of drives include:
  - Compact Disk drive (CD Drive)
  - Hard Disk Drive (HDD)
  - Floppy Disk Drive
- Apart from drives the system unit also houses other components like:
  - The power supply
  - The motherboard
  - Memory modules, and cables.

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# BASIC COMPONENTS OF A COMPUTER

- The System Unit also provide interfaces (connection points) to connect peripheral devices to the computer system.
- The System Unit come in many design types, below are the most common design types:
  - Tower type
  - Desktop type
- Figure 4 **a** and **b** shows the shows the system unit design types of dell desktop computers.

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# BASIC COMPONENTS OF COMPUTERS



**Figure 4a:** Tower Type



**Figure 4 b:** Desktop Type

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# BASIC COMPONENTS OF A COMPUTER

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## Practice Questions

- a. What are peripheral devices?
- b. Explain the three types of computers.
- c. State the computer's primary functionality.
- d. Give four differences between the Second and Third generation computers.
- e. Discuss any three functions of the System Unit.
- f. Write the following abbreviations in full :
  - a. CPU
  - b. PC
  - c. HDD
  - d. GIGO