TOPIC 3: COMPUTER SOFTWARE

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TOPIC OUTLINE

- Unit 1. Introduction to Software
- Unit 2. System Software
- Unit 3. Application Software

TOPIC 3: COMPUTER SOFTWARE
UNIT ONE: INTRODUCTION TO SOFTWARE

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UNIT OBJECTIVES

- questions
- Define and describe the types/classifications of software: (definitions with examples)
- Describe the characteristics of computer software

UNIT INTRODUCTION

- Computer software refers to the electronic instructions and procedures that control the operation of a computer.
- The usefulness of computer hardware depends a lot on available software and the ability of users to utilize the software.
- Software is an analogy of the mind or soul to human beings.without it you are dead,if damaged you are mad.

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UNIT INTRODUCTION (CONT.)

- There are two major types of software: system software and application software.
- Each performs a different function.
- System software e.g. the Operating system manage and coordinate all the other computer programs, devices, resources and activities.
- While Application software like, Word-processors, Paint, Calculator and, Games solve the specific or exact needs of the user.

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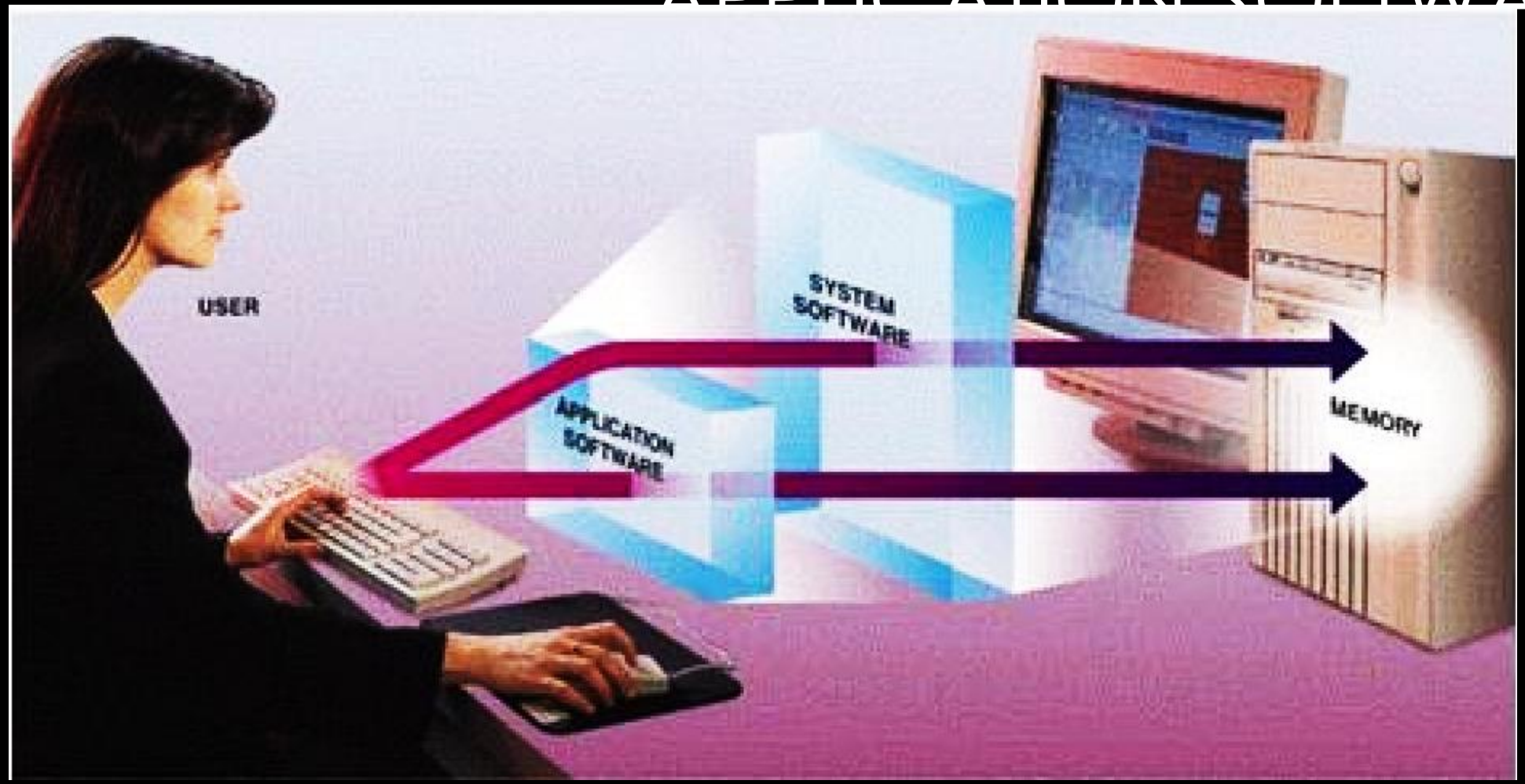
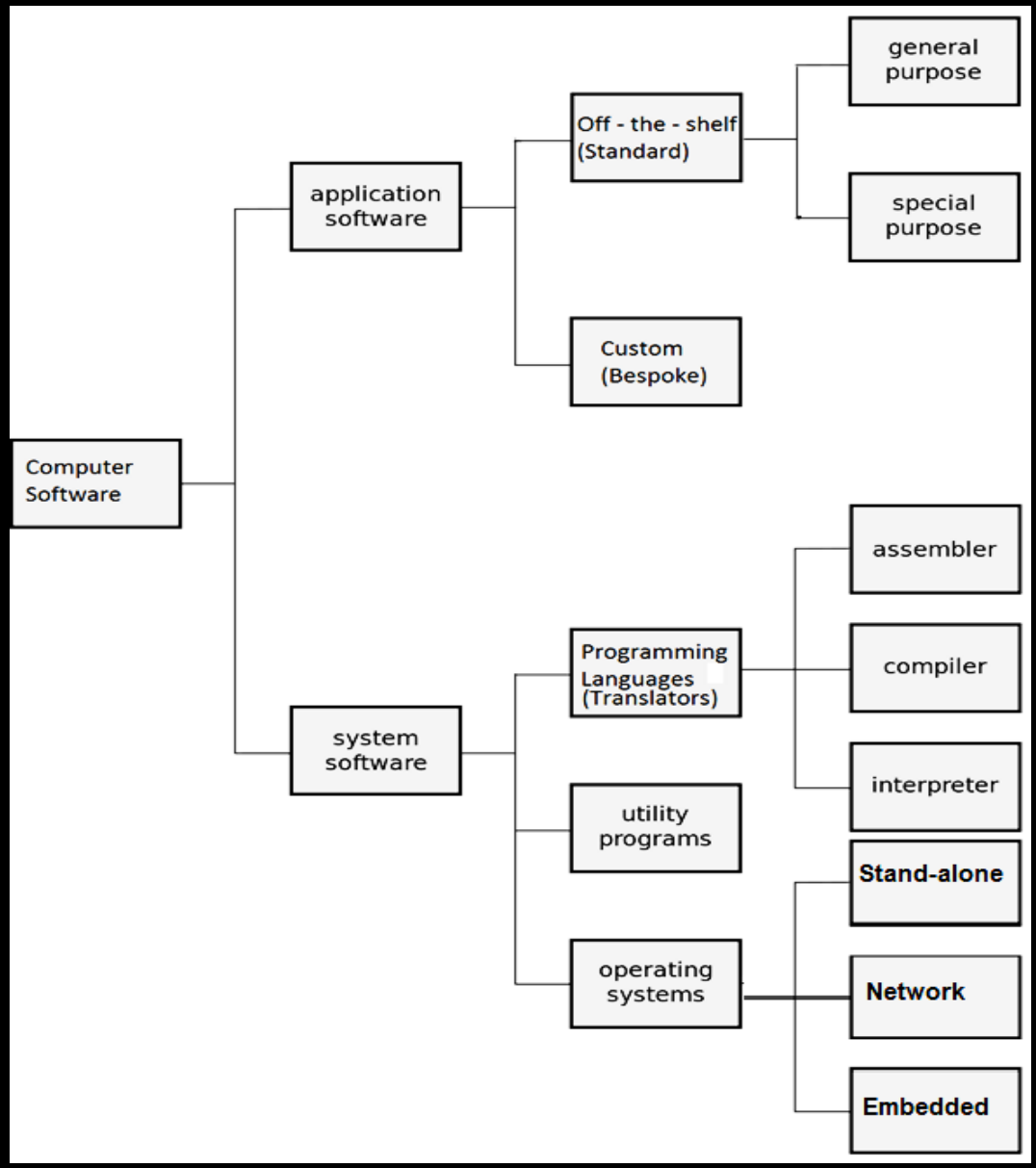
(ILLUSTRATION):SYSTEM AND APPLICATION SOFTWARE



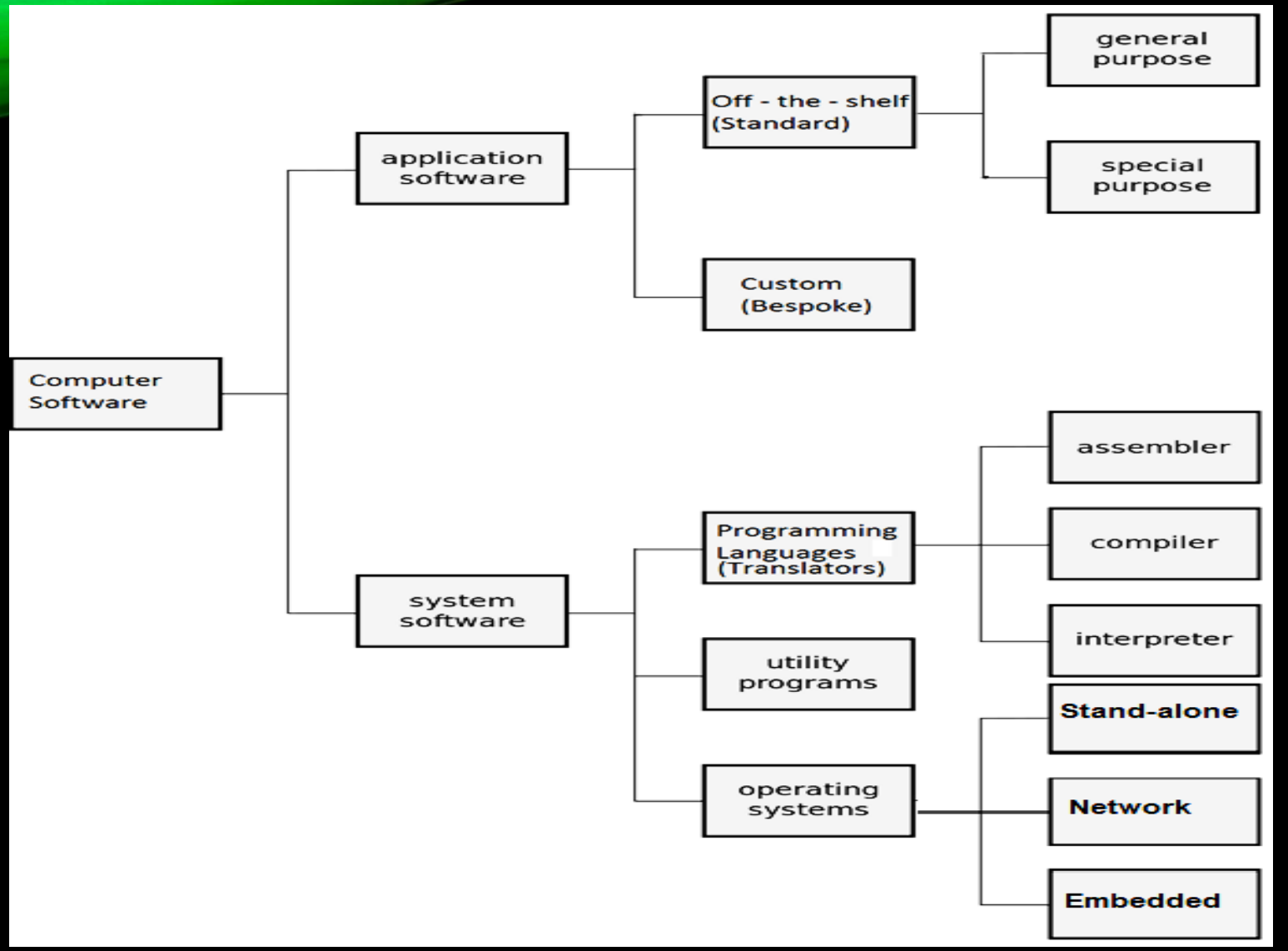
TYPES AND CLASSIFICATIONS OF COMPUTER SOFTWARE

- Computer software can be generally broken down as shown in the chart below:
- NB we shall look at each of these in unit 2 and 3.



TERMINOLOGIES

- Software needs to be accessed before it can be used.
- There are many terms used for the process of accessing software including running, executing, starting up, opening, and others.
- A program can also be referred to as an application and the two words are used interchangeably.


Computer Software
application software
Off - the - shelf (Standard)
general purpose
special purpose
Custom (Bespoke)
system software
Programming Languages (Translators)
assembler
compiler
interpreter
utility programs
operating systems
Stand-alone
Network
Embedded

CHARACTERISTICS OF GOOD COMPUTER SOFTWARE

- ...provides the required functionality.
- ...is usable by real (i.e. simple) users.
- ...is predictable, reliable and dependable.
- ...functions efficiently.
- ...has a "life-time" (measured in years).
- ...provides an appropriate user interface.
- ...is accompanied by complete documentation.
- ...can be easily customized/configured.
- ...can be "easily" maintained and updated.

CHARACTERISTICS OF GOOD COMPUTER SOFTWARE (CONT)

What the software consumer wants

- Cheap to buy
- Easy to learn
- Easy to use
- Solves the problem
- Reliable
- Powerful
- Fast
- Flexible
- Available (easy to obtain)

What the software producer wants:

- Cheap to produce
- Well-defined behaviour
- Easy to "sell"
- Easy to maintain
- Reliable
- Easy to use
- Flexible
- Quick to produce

FACTORS TO CONSIDER BEFORE OBTAINING A SOFTWARE PROGRAM

- correctness — does the software do what it is suppose to do (according to the design specifications)?
- robustness — how does the software respond to unexpected conditions (wrong input)?
- user-friendliness — is the software easy to use by users from the intended audience?
- adaptability — how difficult is it to modify the software to adjust to an ever-changing world?

FACTORS TO CONSIDER BEFORE OBTAINING A SOFTWARE PROGRAM (CONT)

- reusability — can parts of the software be easily reused to build other software systems?
- interoperability — does the software interface with other software systems?
- efficiency — does the software make good use of its resources (memory, disk, CPU, network)?
- portability — can the software to easily ported (moved) to other operating systems
- security — does the software protect the information it is responsible for?

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