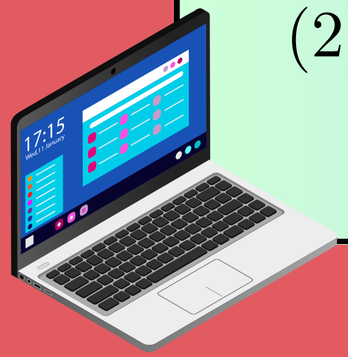
UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SECP1513-01-04-2024/2025 1: TEKNOLOGI DAN SISTEM MAKLUMAT

MIND MAP CHAPTER 2, 3 & 4

(1) SYED RAFID JAMALAULIL (SX231705ECJHF04)
(2) MUHAMMAD AZLAN BIN ADZMI (SX231766ECRHF04)
(3) MUHAMMAD ARSHAD (SX230796ECJHS04)



CHAPTER 2 HARDWARE

EVOLUTION OF IT HARDWARE

- General-Purpose Mainframe and Minicomputer Era (1959)
- Personal Computer Era (1981)
- Client/Server Era (1983)
- Enterprise Computing Era (1992)
- Cloud and Mobile Computing Era (2000)

SYSTEM UNIT

- System Chassis
- System Unit
- System Unit types include Desktops, Laptops, Tablet, Smartphones, Wearables

INPUT

- Any data or instructions used by a computer
- Input devices translate data into a form that the system unit can process
- Input devices include Keyboards, Mice, Pointing, Scanning, Image capturing, Audio-input

HARDWARE TRENDS

- Device and Nanotechnology
- Nanotechnology is the aptitude to perceive, measure, operate, and build materials at the nanometer scale, the size of atoms and molecules.

OUTPUT

- Processed data or information
- Types of output (Text, Graphics/photos, Audio)
- Output devices – Monitors, Printers, Audio-output devices

SOLID-STATE STORAGE

Solid–state devices (SSDs) have no moving parts

Solid-state drives

- Faster and more durable than hard disks
- Access to slash memory or solid state storage

Flash memory cards

- Widely used in laptops, smartphones, GPS

USB Drives (or Flash Drives)

- Connect to USB port
- Capacity of 1 GB to 256 GB
- Portable

TYPES OF HARD DISKS

Internal

- Located inside the system unit
- Used to store programs and data

External

- Removable
- Used to complement internal hard disk

SECONDARY STORAGE

- Secondary storage characteristics include Media, Capacity, Storage devices & Access speed

CHAPTER 3 SOFTWARE

1. TYPES OF SOFTWARE

- System Software
- Application Software
- Programming Software
- Malicious Software

2. SYSTEM SOFTWARE

Features of System Software
- High speed, difficult to modify, close to the system, versatile.

Operating Systems
- Functions: resource management, multitasking, user interface.
- Types: Embedded, Stand-Alone, Network Operating Systems.

Utilities
- Diagnostic programs, antivirus, file backup, file compression.

Virtualization
- Operating System Virtualization, Application Virtualization, Service Virtualization.

3. APPLICATION SOFTWARE

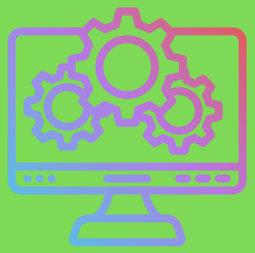
- Need and Functions of Application Software.
- Assists users in performing specific tasks, such as data management and information organization
- Types of Application Software
- Advantages & Disadvantages

4. PROGRAMMING SOFTWARE

History and Types
- High-level and low-level programming languages.

Components of Programming Software
- Compilers, assemblers, debuggers, Integrated Development Environments (IDEs).

Examples Programming Software
- C, Java, Python.



5. MALICIOUS SOFTWARE (MALWARE)

Types of Malware
- Viruses, worms, Trojan horses, spyware, adware, rootkits.

Methods of Spread
- Through software downloads, fake pop-ups, email attachments.

Protection Methods
- Software updates, non-admin accounts, antivirus use.

6. CAREERS IN IT

- Technical Support
- Computer Support Specialist.

7. FUTURE TRENDS IN SOFTWARE

- User Experience Design (UX)
- DevSecOps
- Serverless Computing and Blockchain
- Continuous Integration and Continuous Delivery (CI/CD)
- Augmented Reality (AR) and Virtual Reality (VR)

CHAPTER 4 INFORMATION SYSTEM & SAD

PEOPLE

- people as one of the parts of an information system
- personal computers are all about — making people, and the end users like you, more productive

PROCEDURES

- people as one of the parts of an information system personal computers are all about—making people, and the end users like you, more productive

INTERNET

- information systems provide a way to connect to other people and computers, typically using the Internet.

SOFTWARE

- A program consists of step-by-step instructions that tell the computer how to do its work.

HARDWARE

- equipment that processes the data to create information is called hardware.

DATA

- The raw, unprocessed facts, including text, numbers, images, and sounds

PART 1: INFORMATION SYSTEM

- information system is a collection of people, procedures, software, hardware, data, and the Internet
- Competent end users need to understand how the information flows

ORGANIZATIONAL INFORMATION FLOW

- Information systems support the natural flow of information within an organization's structure
- 5 Functional Areas
- Management Levels
- Information Flow

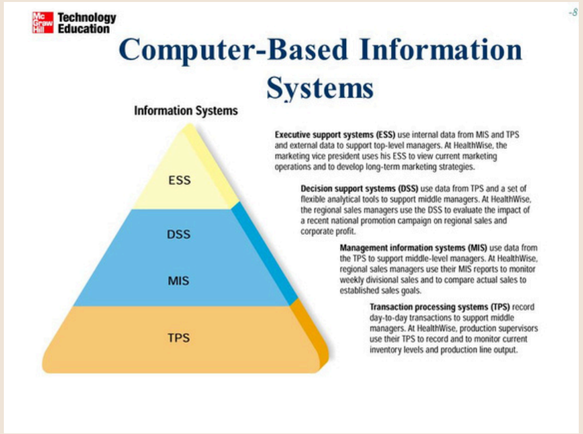
FIVE FUNCTIONS OF AN ORGANIZATION

- Accounting
- Marketing
- Human Resources
- Production
- Research

MANAGEMENT LEVEL AND INFORMATION FLOW

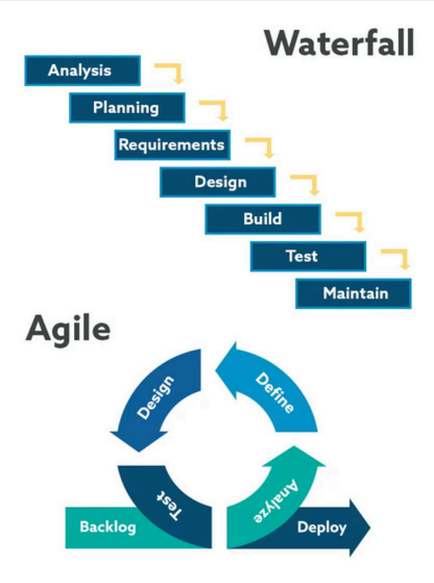
- Management is usually divided into three levels: Top, Middle, and Supervisors
- Each level of management has different information needs
- Top management ◦ Vertical, horizontal, and external
- Middle management ◦ Vertical and horizontal
- Supervisor ◦ Primarily vertical

COMPUTER-BASED INFORMATION SYSTEMS



PART 2: SYSTEMS ANALYSIS AND DESIGN

- people in an organization are involved with an information system
- structure programing
- Waterfall
- Agile



- System Analysis and Design
- Six-phase problem-solving procedure for examining and improving an information system Preliminary investigation