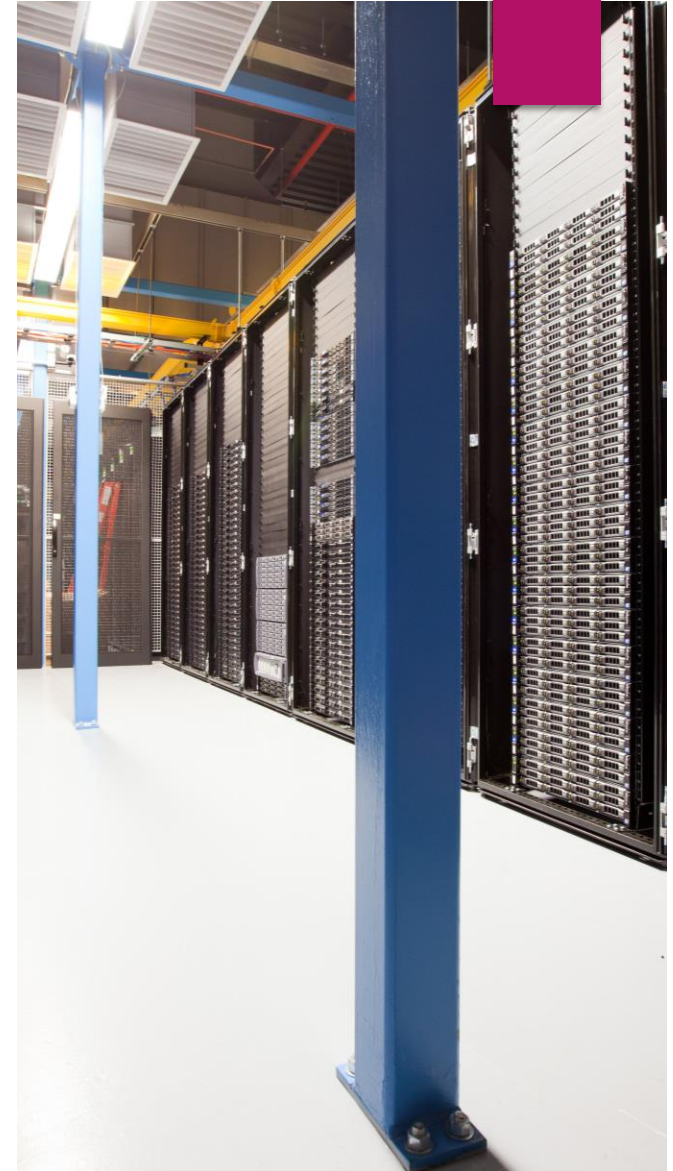MONTGOMERY COLLEGE

IT Fundamentals

CHAPTER 3:

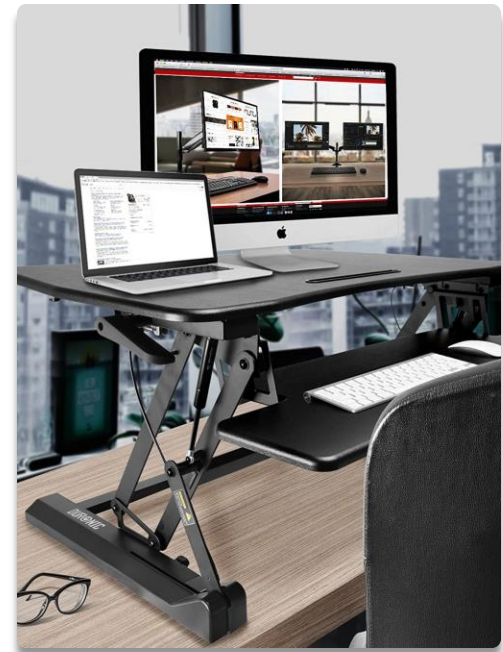COMPUTING DEVICES AND THE INTERNET OF THINGS

Servers

- Centralized computers that many clients (workstations) can access
- Provide services such as:
  - File servers
  - Print servers
  - Web servers
- Dedicated vs. non-dedicated

Workstations

▶ The computers that "regular" users use to do daily work

▶ Needs a network interface card (NIC)

Laptops

- Portable devices
- Like desktop computers, but smaller components
- Built-in keyboard and monitor
- Need a power adapter
- Docking stations
- Cable locks

Tablets and Smartphones

- Smaller than laptops, very portable

- No built-in hardware keyboard

- Typically run a mobile OS, such as Android or iOS

Interacting with Mobile Devices

- Gesture-based interactions
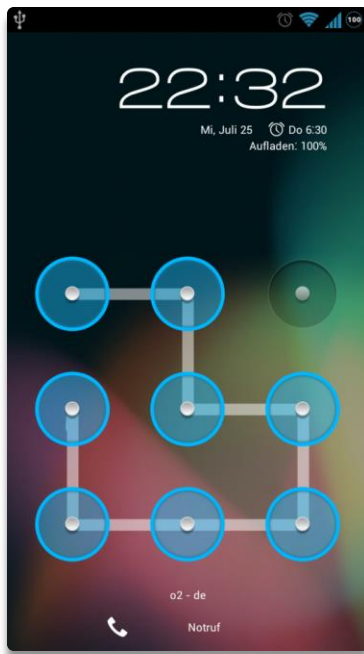 - Tap
  - Swipe
  - Pinch
  - Kinetics

Screen Orientation

▶ Portrait vs. Landscape

▶ Apps need to be programmed to rotate

Mobile Locking and Security

- ▶ Mobile OS security lock

- ▶ Need a passcode to enter

- ▶ Newer phones use biometrics

Setting up a Wireless Connection

- Usually in OS settings

- Wi-Fi

- Bluetooth

Airplane Mode

- Option in OS settings

- Turns off all external connections
  - Cellular
  - WiFi
  - Bluetooth

Getting Additional Apps

- Apps are built for the specific OS

- Apple iTunes

- Google Play

Synchronization Options

- Allows you to access files from your device or online

- Acts as a backup

- Can synchronize to a local computer or to the cloud

Gaming Consoles

▶ Specialized for playing games, watching digital media, or connecting to the Internet

▶ Often connects to an external display such as a TV

▶ Usually not very upgradable

The Internet of Things (IoT)

- ▶ Allows practically any device to be connected to the Internet
- ▶ Uses include:
    - ▶ Home entertainment systems
    - ▶ Heating and cooling (thermostats)
    - ▶ Home appliances
    - ▶ Security systems and IP cameras
    - ▶ Modern cars
    - ▶ Medical devices
    - ▶ Manufacturing
    - ▶ Transportation
    - ▶ Infrastructure

Potential IoT Issues

- Standards and governance

- Data security and privacy

- Data storage and usage

Chapter 3: Computing Devices and the Internet of Things

- ▶ Compare and contrast common computing devices and their purposes
  - ▶ Mobile phones
  - ▶ Tablets
  - ▶ Laptops
  - ▶ Workstations
  - ▶ Servers
  - ▶ Gaming consoles

- ▶ IoT
  - ▶ Home appliances
  - ▶ Home automation devices
    - ▶ Thermostats
    - ▶ Security systems
  - ▶ Modern cars
  - ▶ IP cameras
  - ▶ Streaming media devices
  - ▶ Medical devices