MINNESOTA TECH FOR SUCCESS

Week 5- 7: Software & Operating Systems

12/4/2024

Agenda

- **Announcements**
- **Classroom (1 – 1:30pm)**
  - Software & Operating Systems – Installing and Using Software with Chad
- **Break (5 min)**
- **Classroom (1:35 – 2:30pm)**
  - HTML/CSS with Esther
- **Break (5 min)**
- **Warehouse (2:35 – 3:30pm)**
  - External Cleaning with Jason, Erik, and Dan

ANNOUNCEMENTS

Announcements for 12/4

- **Schedule:**
  - Next session on Wednesday, 12/11 (week 7)
- **Week 5-7: Software and Operating Systems**
  - November 20th; December 4th & 11th
- **Week 8-10: Module 2 | Networking Basics**
  - December 18th; January 8th & 15th
- Media Release forms

EXPECTATIONS

Expectations – Work Conduct

- **Communication**
  - Monitor language – no swearing/cursing, toxicity
  - Monitor actions – no harassment or bullying
- **Physical Contact**
  - No touching, hugging – respect boundaries
- **Help, support and encourage one another**

- **Office & Warehouse**
  - Clean up work areas and properly dispose of food & beverage containers
  - Please Recycle

Expectations - Attendance

- **If you will be late or miss a session:**
  - **Please send an email to –** Chad cphaengdara@techforsuccess.org
  - **Include:** Reason and when you expect to be on site

  - Reminder: This is an official work internship at a professional organization. Inform MTFS ASAP if/when you are going to be late or be out for the day.

- **MTFS**
  - Tracks attendance and work hours
  - Sends attendance list to Great River School

Values

- **R**espect
- **A**ccountability
- **I**mprovement
- **S**teadfast
- **E**ncouragement

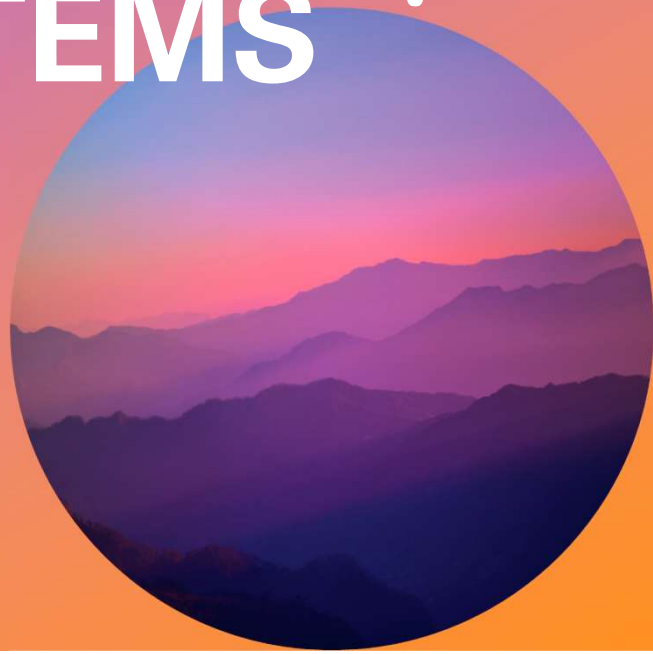
Our Websites

- **MTFS Website - https://techforsuccess.org**

- **MTFS-CAS Student Website –** https://mntechlearn.org

SOFTWARE & OPERATING SYSTEMS

Week 6



Software & Operating Systems: Objectives

1. **What is software?**
   - Explanation of software, its role in computing, and the various types of software, including applications and operating systems
2. **Basics of operating systems**
   - Fundamental functions of operating systems and how they interact with hardware
3. **How to install and use software**
   - Guide on how to install and use software applications on a computer
4. **Simple software troubleshooting**
   - Basic troubleshooting steps for software-related issues, such as resolving software crashes.

Recap: What is Software?

- **Software:** Instructions that tell a computer, electronic device, or system what to do
- Has a collection of programs, procedures, and routines associated with the operation of a computer system
- Written in a programming language – executed by a **CPU**
- **3 Types of Software:** System, Application, & Network

Recap: What is Software?

```
const LOCALE = globalThis.navigator.language

const div = document.body.appendChild(document.createElement('div'))
const list = div.appendChild(document.createElement('ol'))

const dayNames = new Map()

for (let i = 0; i < 7; ++i) {
    const d = Temporal.PlainDate.from({
        year: Temporal.Now.plainDateISO().year,
        month: 1,
        day: i + 1,
    })

    dayNames.set(d.dayOfWeek, d.toLocaleString(LOCALE, { weekday: 'long' }))
}

for (const num of [...dayNames.keys()].sort((a, b) => a - b)) {
    list.appendChild(Object.assign(
        document.createElement('li'),
        { textContent: dayNames.get(num) },
    ))
}
```

- **Program** - a specific set of instructions designed to accomplish a particular function or task through a programming language

- Software can be made up of multiple programs and programming languages
  - Windows is written in C++; the kernel written in C

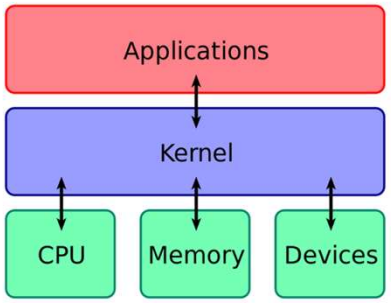
Recap: Operating System (OS)

- **Operating System (OS)** - software that manages and controls a computer's hardware and software resources

- Allows the user to interact with the computer
  - Manages and provides interface between hardware, application software, and user
  - **GUI** – Graphical User Interface: interact through graphical icons and visual indicators

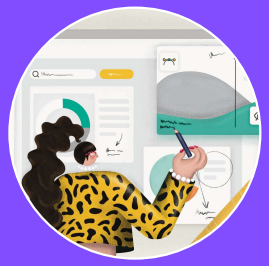
- Several different computer programs run at the same time while it accesses CPU, memory (RAM), and storage (SSD/HDD).

- **Kernel** - a core part of an operating system (OS) that manages system hardware resources
  - It acts as a bridge between **software applications** and the **computer's hardware**



Software Interaction

User



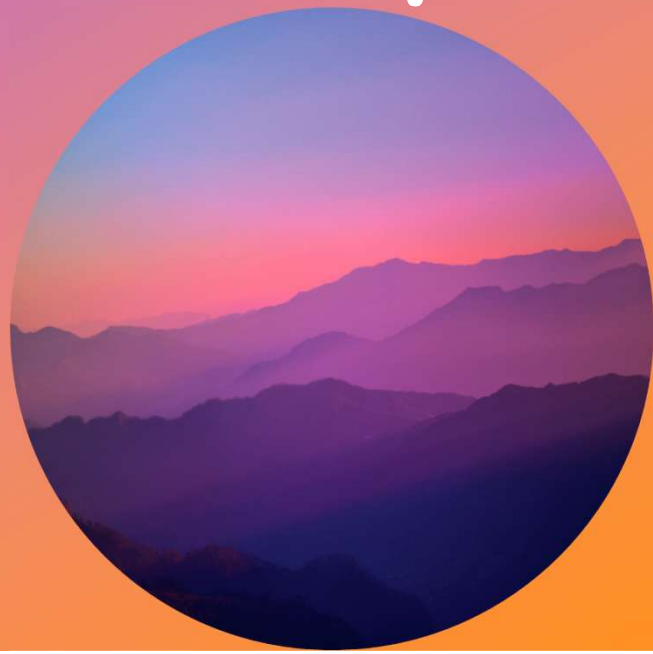
Application

Operating System

Hardware

INSTALLING & USING SOFTWARE

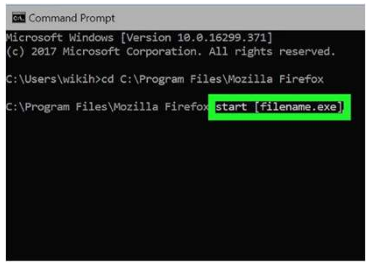
Applications



Installing Software Applications

1. Standalone Installer
   - .exe, .zip
2. App Store: Microsoft Store, Mac App Store

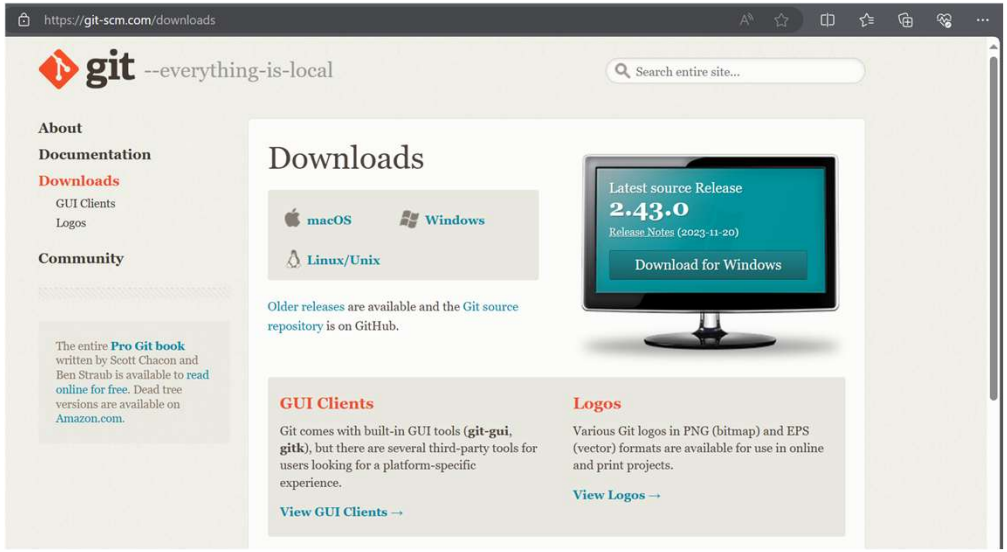
3. Command-line shell Install



4. Physical (thumb-drive)

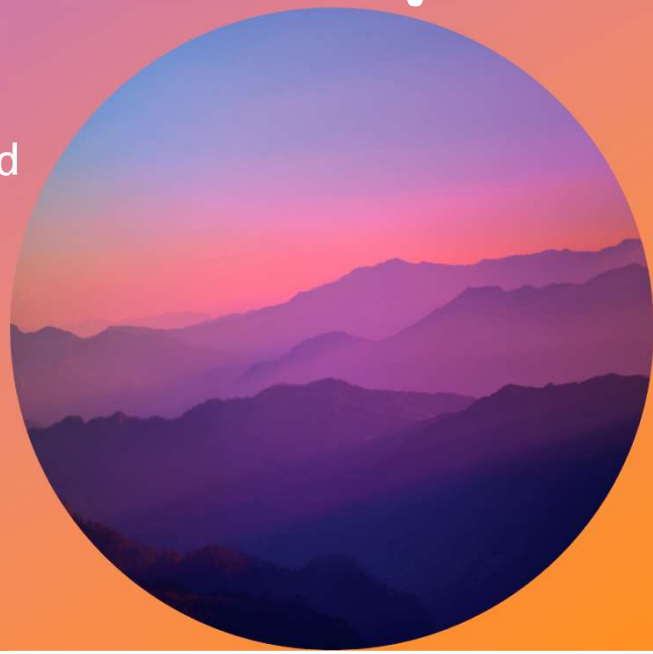
Install Method 1: Standalone

1. Navigate: Website
2. Locate & Click: download session
3. Click: download
4. Navigate & click on taskbar: ‘File Explorer’ 
5. Navigate: Windows folder: ‘Downloads’



ACTIVITY

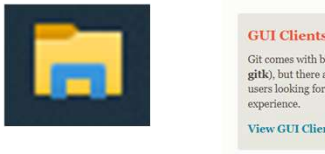
Install Application in Standalone Method



Install Method 1: Standalone

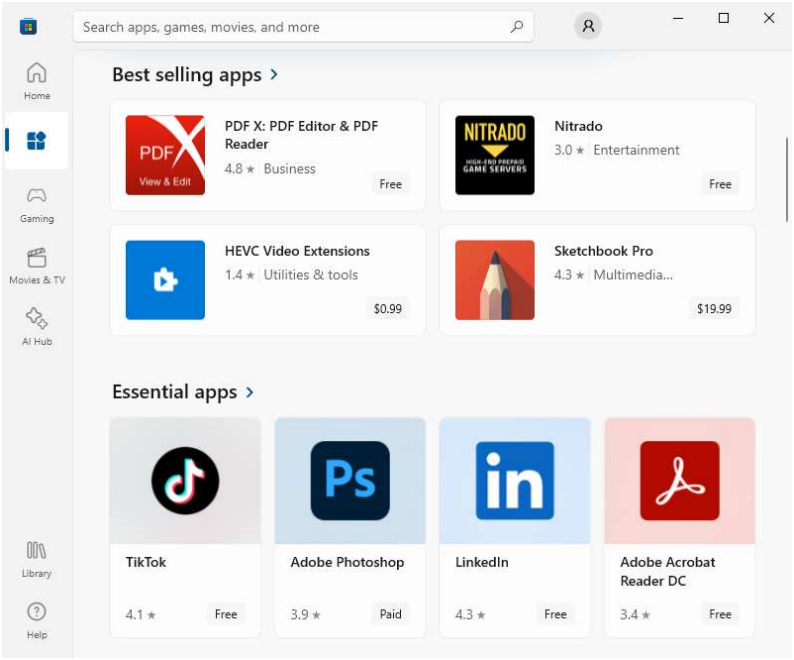
1. **Go to:** https://git-scm.com/downloads
2. **Click:** Windows
3. **“Click here to download”**
4. Navigate to ‘File Explorer’ > ‘Downloads’
5. Open 

Select “Yes”
6. Progress through the installation
    1. Select: “Use Visual Studio Code as Git’s default editor”
    2. Progress through all other defaults



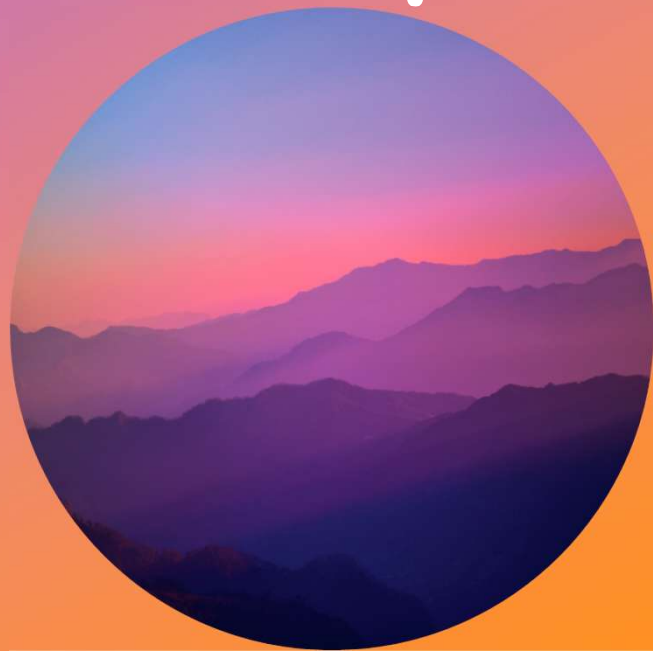
Install Method 2: App Store (Microsoft Store)

1. Windows Search - Press: ⊞ + S
2. Type: “store” 
3. Open: Microsoft Store
4. Click: Apps
5. Search and click on an app
6. Click: Install



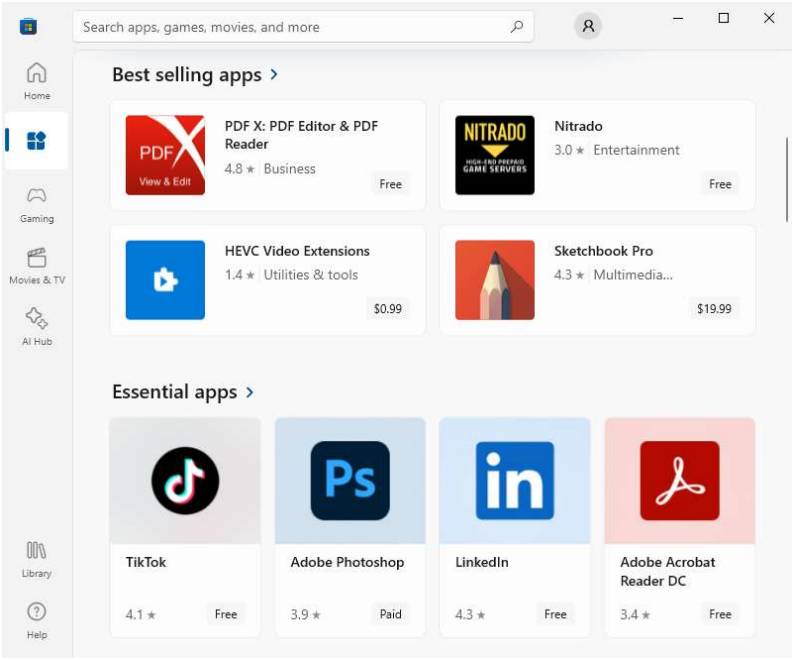
ACTIVITY

Install Application in App store



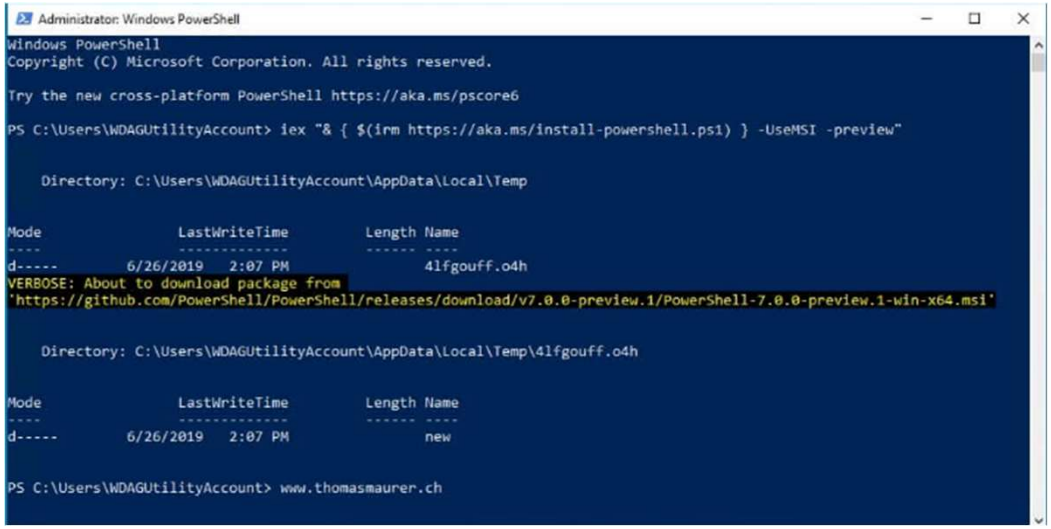
Install Method 2: App Store (Microsoft Store)

1. Windows Search - **Press:** + **S**
2. **Type:** “store” 
3. **Open:** Microsoft Store
4. **Click:** Apps
5. **Search & click** on Brave browser (or Mozilla Firefox)
6. **Click:** Install



Install Method 3: Command-line Shell (Windows PowerShell)

1. Press: ⊞ + X
2. Select: Windows PowerShell (Admin)
3. Type: ‘cd your/directory/folder’ (to change directory over where your application file is)
4. Type: ‘start your-exe-file.exe’
5. Follow prompts through GUI to finish install (steps may vary)



Useful for centralized, repetitive installations across multiple computers

Install Method 4: Physical (Thumb Drive)

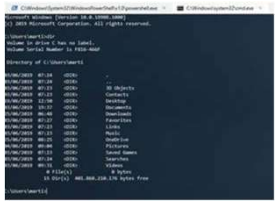
1. Obtain thumb drive* (USB Flash Drive) with unused ample storage space (8 GB +)
2. Navigate to and follow the OS manufacturer's guide on their website
3. Pre-load install software(iso file) into the USB Flash Drive
4. **Power off PC** and **insert** USB Flash Drive
5. **Boot on PC** from the USB installation drive
6. Follow instructions on Windows Setup to finish installation

*You can also purchase a pre-loaded OEM physical copy of Windows 11

Ways to Use/Launch Applications

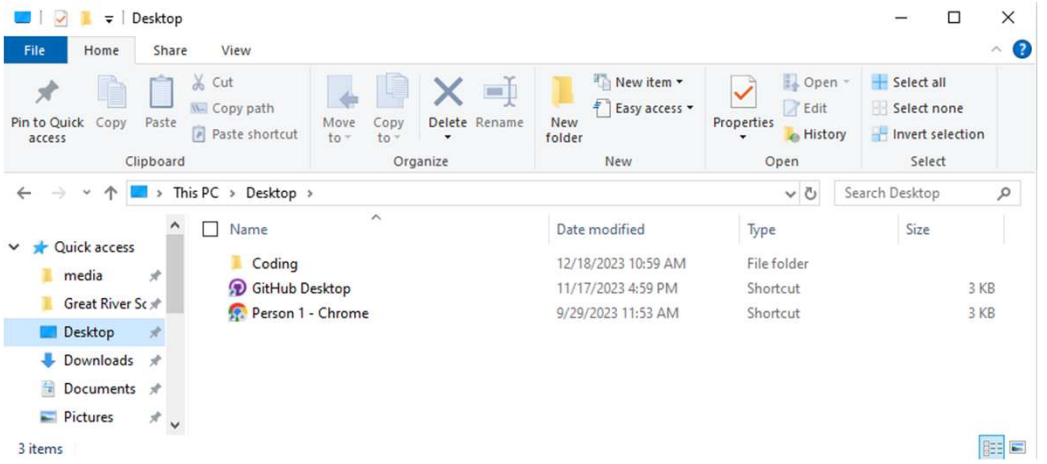
1. Windows Start

2. Power Shell

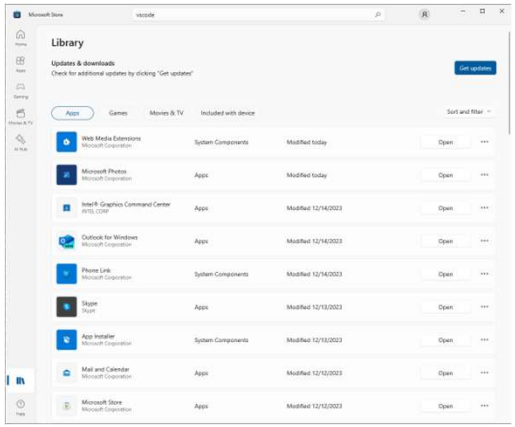


3. App shortcut icon

4. File Explorer .exe



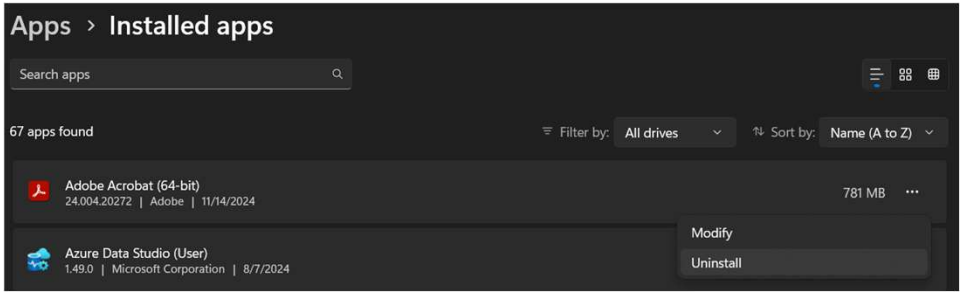
5. Microsoft Store library



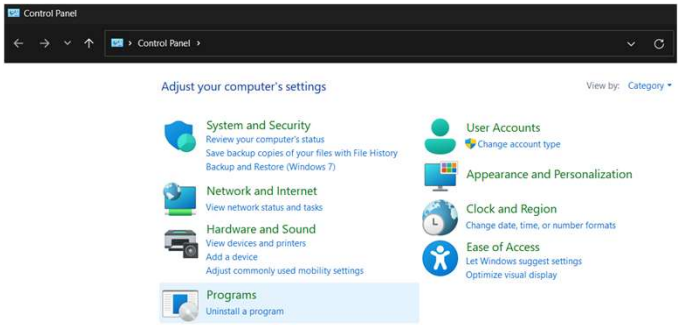
Ways to Uninstall Applications

1. **Start Menu Method**:
    1. **Press:** ⊞
    2. **Click:** “All”
    3. **Right-click** on the app; and **select** “Uninstall”

2. **Settings App Method**:
    1. **Press:** ⊞ **+ I**
    2. **Click:** Apps > Installed Apps
    3. Find the app to uninstall and **click** the three-dot icon; **select** Uninstall



3. **Control Panel Method**
    1. **Press:** ⊞ **+ S**
    2. **Type:** “Control Panel” and open it
    3. **Select:** Programs - Uninstall a program
    4. Find the app to uninstall and **right-click** on it; **select** Uninstall



Troubleshooting Methodology

1. Identify the problem

- Gather information from the user, identify user changes, and, if applicable, perform backups before making changes
- Inquire regarding environmental or infrastructure changes

2. Establish a theory of probable cause (question the obvious)

- If necessary, conduct external or internal research based on symptoms

3. Test the theory to determine the cause

- Once the theory is confirmed, determine the next steps to resolve the problem
- If the theory is not confirmed, re-establish a new theory or escalate

4. Establish a plan of action to resolve the problem and implement the solution

- Refer to the vendor's instruction for guidance

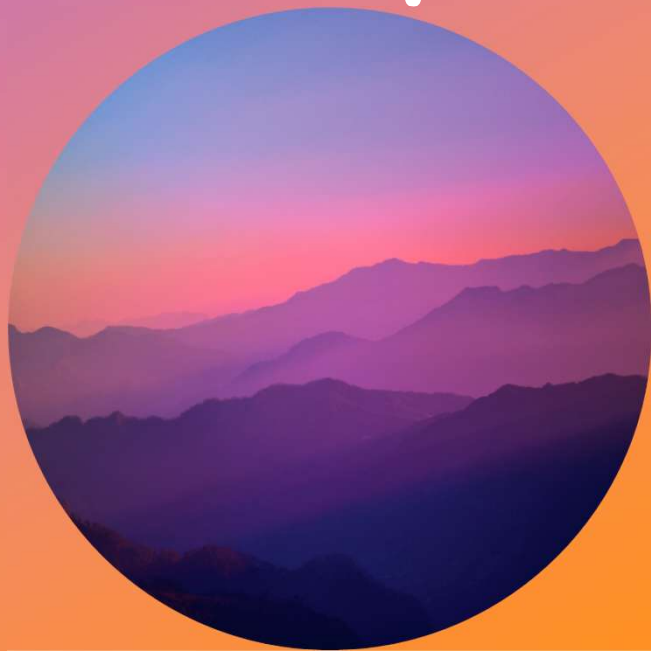
5. Verify full system functionality and, if applicable, implement preventive measures

6. Document the findings, actions, and outcomes

CompTIA

BREAK

5 minutes



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