CODE:YOU

INTRODUCTION TO PROGRAMMING

[WEEK 1]

INTRO-MINDERS

THIS WEEK

- Code of Conduct is Due
- Video Assignments

HOW DO YOU CONTACT

- **Program Issues / Dropping Sessions**
  - Email (apply@codelouisville.org / info@codekentucky.org
  - slack
- **Curriculum / Syllabus / Classroom Link Issues**
  - Google Classroom
  - slack
- **Classes / Activities / Discussions / Coding Help**
  - slack

WHO DO YOU CONTACT

COMMUNITY COORDINATORS

Jared Mueller - Code Kentucky
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Rekkai Steed - Code Louisville
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TECHNICAL CAREER COACHES

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STUDENT SUCCESS

Brandi Mulligan
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HOW DO YOU ASK FOR HELP?


COMPUTER CHECK

WHAT DO YOU NEED?

MEETUP CHECKLIST

	**Desktop / Laptop**
	**Webcam / Microphone / Headphones**
	**Internet Access (High Speed)**
	**Comfortable Space to Work with Few Distractions**
	**Hydration (Water, Coffee, Tea, Red Bull)**

WEBSITE ACCESS CHECKLIST

	Google Classroom
	Pluralsight
	slack
	replit
	GitHub


STOP
WHO DOES NOT HAVE
WHAT THEY NEED?

THE COMPUTER

WHAT IS A COMPUTER?

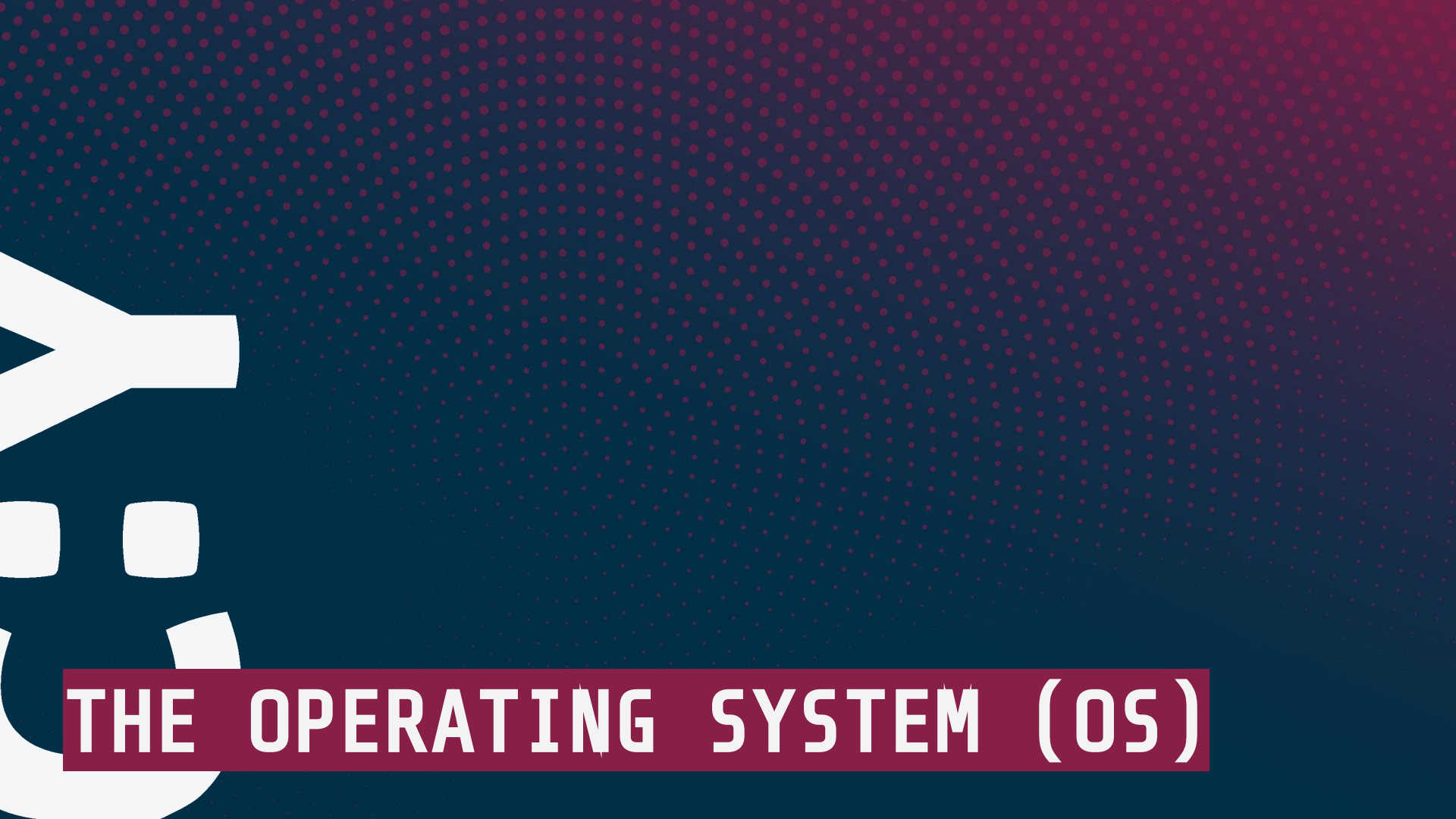
WHAT IS A COMPUTER?

A **computer** is an **electronic device that manipulates information**, or **data**. It has the **ability to store, retrieve, and process data**.

You may already know that you can use a computer to **type documents, send email, play games,** and **browse the Web**.

TYPES OF COMPUTERS

- Mainframe/Supercomputer
- Server
- Workstation (CAD/Design/Video/Animation)
- Personal Computer
  - Desktop
  - Laptop
- Tablet
- Phone


THE OPERATING SYSTEM (OS)

WHAT IS AN OS?

WHAT IS AN OPERATING SYSTEM?

It's **a program that manages a computer's resources**, especially the allocation of those resources among other programs.

Typical resources include the **central processing unit (CPU)**, **computer memory (RAM)**, **file storage (hard drive, thumb drive)**, **input/output (I/O) devices (mice, keyboards)** and **network connections (CAT5/6 physical cable, WiFi)**.

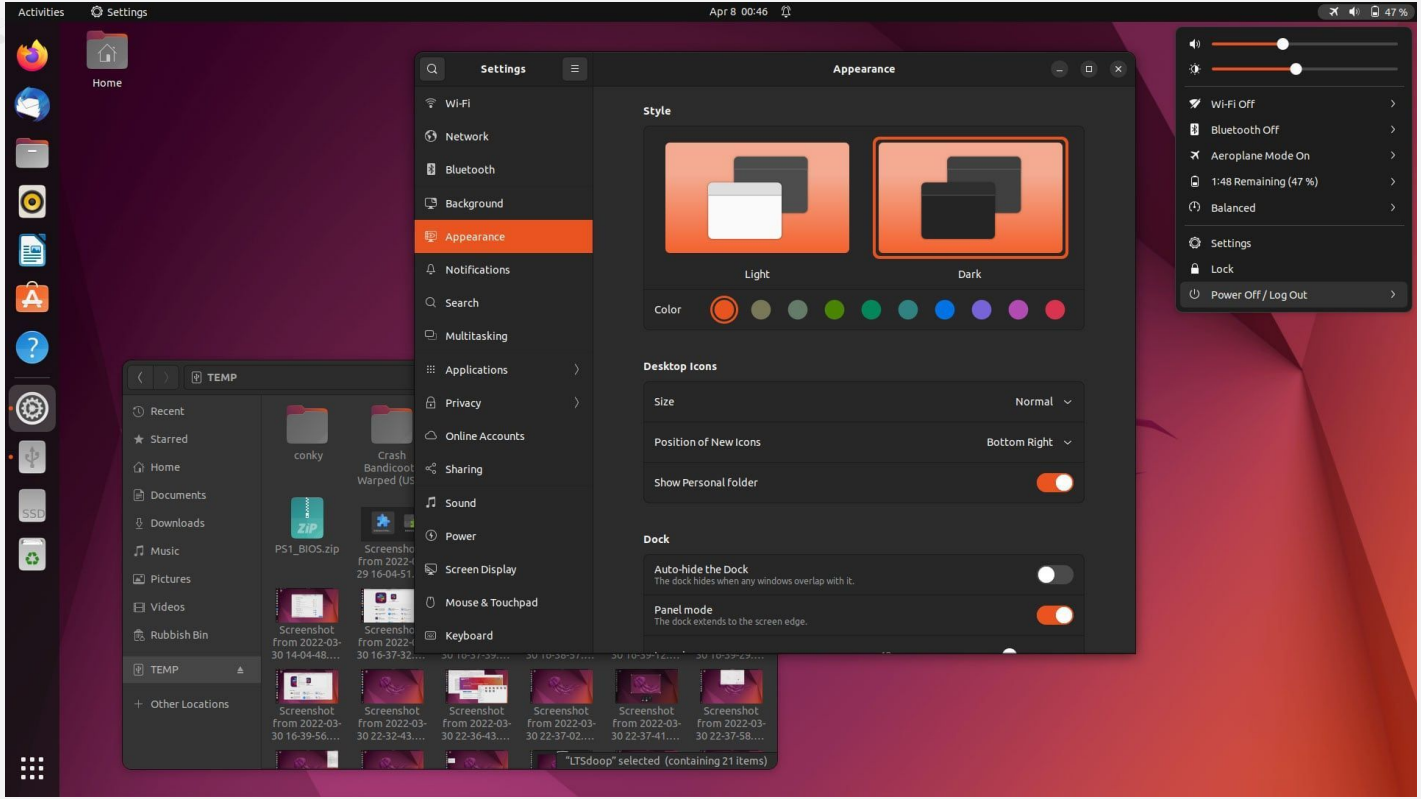
TYPES OF OPERATING SYSTEMS

- Microsoft Windows
- Apple OS X
- Unix/Linux
  - Ubuntu
  - RedHat
  - Debian
  - CentOS

MICROSOFT WINDOWS

APPLE OS X

UNIX / LINUX


Activities
Settings
Apr 8 00:46
47 %
Home
Settings
Appearance
Wi-Fi
Network
Bluetooth
Background
Appearance
Notifications
Search
Multitasking
Applications
Privacy
Online Accounts
Sharing
Sound
Power
Screen Display
Mouse & Touchpad
Keyboard
Style
Light
Dark
Color
Desktop Icons
Size
Normal
Position of New Icons
Bottom Right
Show Personal folder
Dock
Auto-hide the Dock
The dock hides when any windows overlap with it.
Panel mode
The dock extends to the screen edge.
Wi-Fi Off
Bluetooth Off
Aeroplane Mode On
1:48 Remaining (47 %)
Balanced
Settings
Lock
Power Off / Log Out
TEMP
Recent
Starred
Home
Documents
Downloads
Music
Pictures
Videos
Rubbish Bin
TEMP
Other Locations
conky
PS1_BIOS.zip
"LTSdoop" selected (containing 21 items)

WHAT OS ARE YOU USING?

THE FILES

WHAT ARE COMPUTER FILES?

WHAT ARE COMPUTER FILES?

A **computer file** or **file** is a **collection of data** that is **stored** and **organized** for easy retrieval by a computer system. It is a **basic unit of information in computer storage** and is typically represented by a **unique name** and a **file extension** that indicates **file format**, or what type of file it is.

COMMON FILE TYPES & SIZES

File Type	Size Range	Example Size
Plain Text (.txt)	Few bytes (**B**) to kilobytes (**KB**)	10 KB
Microsoft Word (.docx)	kilobytes (**KB**) to megabytes (**MB**)	200 KB
PDF Document (.pdf)	kilobytes (**KB**) to megabytes (**MB**)	2 MB
JPEG Image (.jpg)	kilobytes (**KB**) to megabytes (**MB**)	500 KB
PNG Image (.png)	kilobytes (**KB**) to megabytes (**MB**)	1 MB
MP4 Video (.mp4)	kilobytes (**KB**) to megabytes (**MB**)	100 MB
MP3 Audio (.mp3)	megabytes (**MB**)	5 MB

WHAT IS A FILE PATH?

A computer file path is like a **set of directions** that helps your computer **find and access** a specific file **stored on its hard drive** or in a connected storage device.

Just like you need an address to find a house, your computer needs a path to find a file.

COMPONENTS OF A FILE PATH

Drive (Windows): On Windows, you'll usually see letters like C: or D: at the beginning of an absolute path. These indicate different hard drives or storage devices.

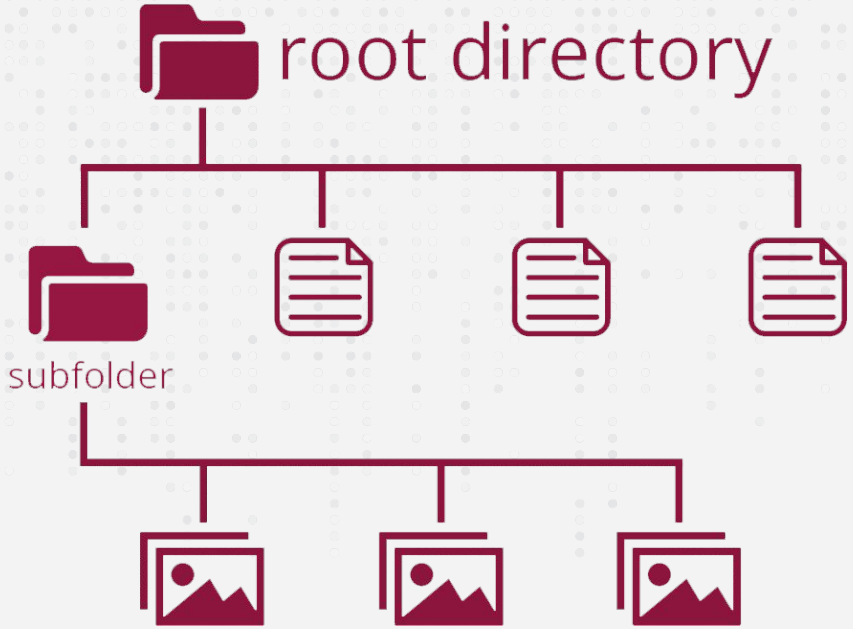
Root Directory: This is the starting point of an absolute path. On Windows, it's usually **C:** for the C drive. On Linux/macOS, it's just **/**.

Folders (Directories): These are like the rooms in a house. They help organize files. Folders are separated by backslashes **** on Windows and forward slashes **/** on Linux and macOS.

File Name: This is the actual name of the file you're trying to access, like **myfile.txt**.

WHAT IS THE FILE TREE?

The **code files** for a project, app or software component are typically organized in a folder structure or "**file tree**".



ABSOLUTE FILE PATHS

These are like giving the **full address**, starting from the **very top level of the storage system**.

Imagine it as giving directions starting from the root of a tree.

EXAMPLES

C:\Users\YourUsername\Documents\myfile.txt (on Windows)

/home/YourUsername/Documents/myfile.txt (on Linux/macOS)

RELATIVE FILE PATHS

These are like giving directions starting from your current location (directory). It's a way of telling your computer where to find the file based on your current position in the storage system.

EXAMPLE

Already in the **Documents folder**, the relative path to **myfile.txt** could just be **myfile.txt**.

PARTS OF A FILENAME

FILENAME . EXT

File Name Extension

PARTS OF A FILE

The parts of a computer file can vary depending on the file system and the specific file format, but in general, a file consists of the following components:

File Name

File Extension

Metadata

Data Content

File Header/Footer

WHAT CHARACTERS TO USE

a-z (lowercase)

0-9

_ (underscore)

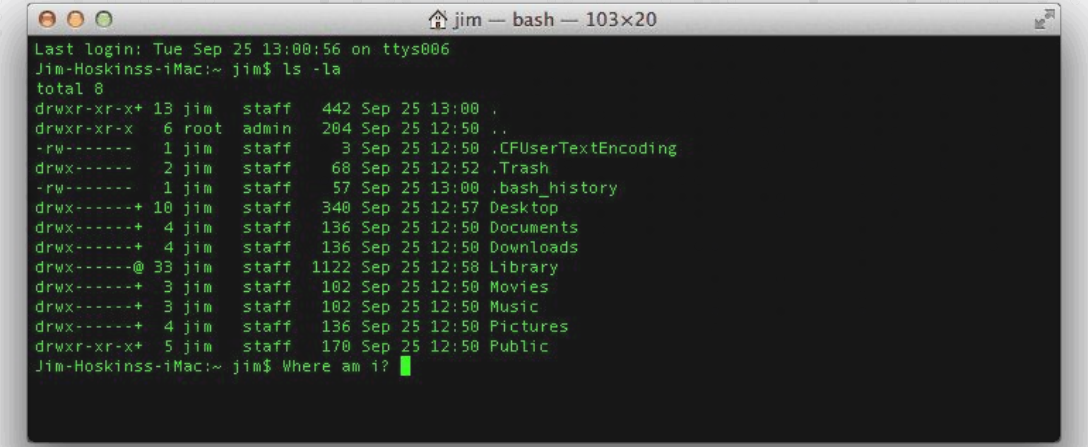
- (dash/minus)

THE COMMAND LINE

WHAT IS THE COMMAND LINE INTERFACE (CLI)?

WHAT IS THE CLI?

A **command-line interface** (CLI) is a **text-based user interface** (UI) used to **run programs**, **manage files** and **interact** with the computer.



WHAT IS THE TERMINAL/CONSOLE?

A **computer terminal** or **console** is an electronic or electromechanical hardware device that can be used for **entering data into**, and **transcribing data from**, a computer or a computing system.

WHAT IS THE SHELL?

The **terminal passes commands to another program** to figure out what the user wants to do, and in most cases, that program is the **shell**, which forms the outer layer of the OS. The **shell** sends those commands to the **kernel**.

WHAT IS THE KERNEL?

Acts as the **interface between** the **Application Software** and the **Hardware**. **Memory Allocation(RAM)** and the **Processor Allocation (CPU)** will also be taken care of by the **Kernel**

THE COMMANDS

WHAT ARE TERMINAL COMMANDS?

WHAT ARE COMMANDS?

Terminal **Commands** are **operations** that are built into the shell to **interact with the files, folders** on the computer(s) it's attached to.

Commands can interact with the **other operations** contained within its programming.

This is the starting point for **scripting**; commands interacting with other commands contained in a **file** that is **ran** or **executed**. (.exe)

THE ANATOMY OF A COMMAND

Commands are made up of 3 basic parts the **Command Name**, **Options** (flags), and **Arguments** which are the files and folders you interact with.

NAME **-x** **NAMES**

COMMAND NAME

OPTIONS / FLAGS

ARGUMENTS

BASIC BASH COMMANDS

ECHO

Prints (on screen) or “**echos back**” in the **terminal** whatever parameter we pass it.

```
$ echo Hello Class!
Hello Class!
$ _
```

BASIC BASH COMMANDS

PWD

Print Working Directory and it **prints** the "place" or **directory** we are currently at in the computer.

```
$ pwd
\\User\
$ _
```

BASIC BASH COMMANDS

LS

Lists or shows the **contents of the current directory**. It will show both the **files and folders** of the **current folder.**

```
$ ls
Desktop Documents Downloads Music Photos
$ _
```

BASIC BASH COMMANDS

CD

Short for **Change Directory** and it will take you from your **current directory to another**.

```
$ cd Documents\Projects

\\User\Documents\Projects> _
```

BASIC BASH COMMANDS

MKDIR

Short for **Change Directory** and it will take you from your **current directory to another**.

```
$ mkdir project1
\\User\Documents\Projects\project1> _
```

BASIC BASH COMMANDS

RMDIR

Short for **Remove Directory,** it needs the directory name parameter just as mkdir

```
$ rmdir project1
\\User\Documents\Projects> _
```

BASIC BASH COMMANDS

TOUCH

Creates an **empty file in your current directory**. Takes **filename** as a **parameter**.

```
$ touch welcome.txt
$ ls
$ welcome.txt
```

BASIC BASH COMMANDS

CP

This command **copies files or directories**, and **takes 2 parameters**. First is the file or directory you want to copy, and the second one is the destination of your copy

```
$ cp welcome.txt goodbye.txt
$ ls
$ welcome.txt goodbye.txt _
```

BASIC BASH COMMANDS

RM

Removes or **deletes** files from the the computer.

```
$ rm welcome.txt
$ ls
$ goodbye.txt _
```

Basic BASIC BASH COMMANDS

MV

Allows us to **move a file or directory** from the current place to another.

```
$ mv goodbye.txt ./project2/later.txt
$ ls
$ _
```

INTERACTIVE

In this class activity we will navigate and create folders and documents in the terminal or console.

TOOLS NEEDED:

Computer

Terminal or Console (built-in)

Replit (Bash)

INTERACTIVE

GOOGLE WORKSPACE

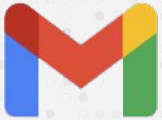
Formerly G Suite

WHAT IS GOOGLE WORKSPACE?

WHAT IS GOOGLE WORKSPACE?

Google Workspace (formerly known as **Google Apps** and later **G Suite**) is a collection of **cloud computing, productivity** and **collaboration tools**, software and products developed and marketed by **Google**.

WHAT IS GOOGLE WORKSPACE?



Google Mail

Google Calendar

Google Meet

Google Drive

WHAT IS GOOGLE DRIVE?

Google Drive is a cloud-based storage solution that allows you to save files online and access them anywhere from any smartphone, tablet, or computer. Drive also makes it easy for others to edit and collaborate on files.

Google Docs Editors




GOOGLE DOCS EDITORS

Google Docs	Text Documents	Proposal, reports, shared meeting notes
Google Slides	Presentations	Pitch decks, training modules, presentations
Google Sheets	Spreadsheets	Project plans, budgets, analytics
Google Forms	Forms	Surveys, quizzes, polls

THE ACTIVITY

GOALS:

In this class activity we will navigate and create folders and documents. We will also create our first HTML document and view it in a browser.

TOOLS NEEDED:

Computer

Text Editor

Web Browser (Chrome)

DEMO / ACTIVITY

SHOW OFF TIME!

(SHOW US WHAT YOU DID)

QUESTIONS?

THIS WEEK'S DELIVERABLE