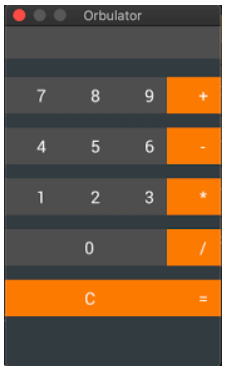
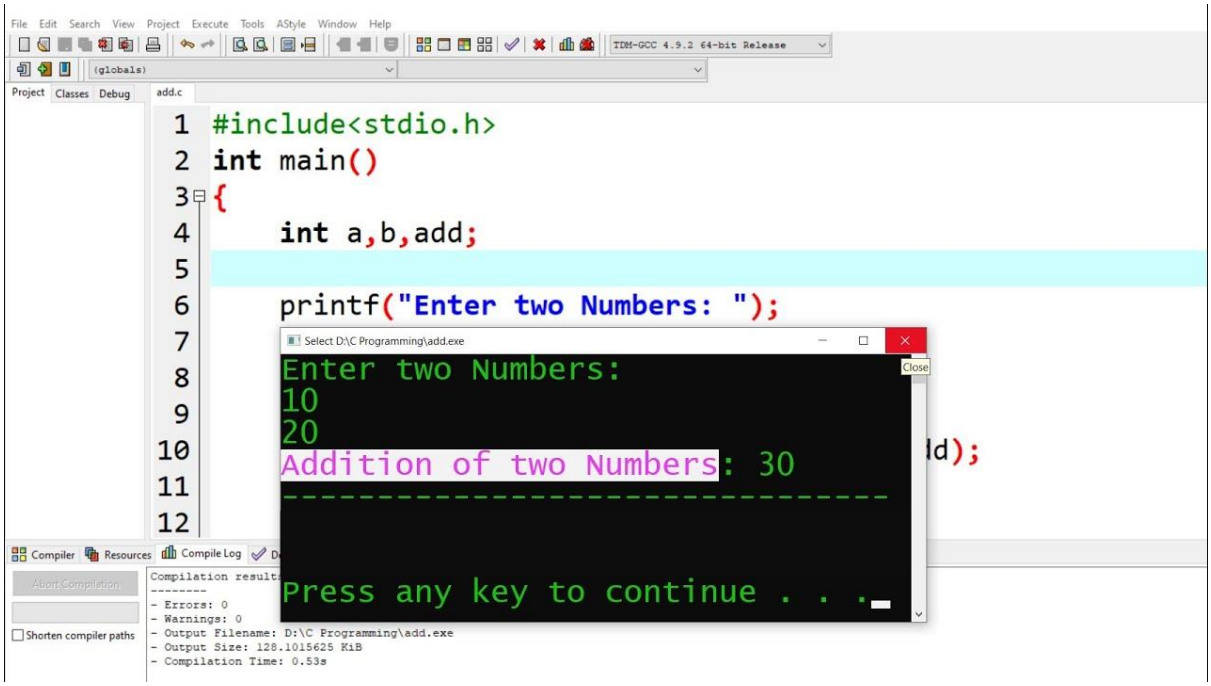
What is Linux: Linux is an Operating system.

GUI vs CLI

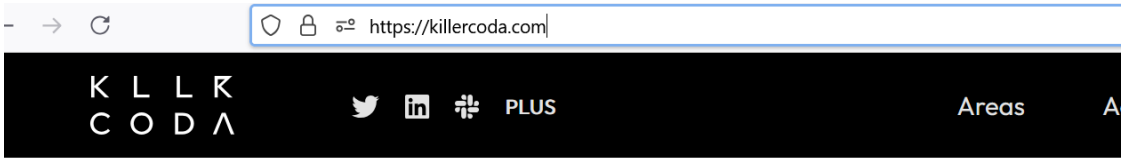
GUI stands for **Graphical User Interface**. It is a type of user interface that allows users to interact with electronic devices using graphical icons, buttons, and visual indicators, rather than text-based interfaces, typed command labels, or text navigation.

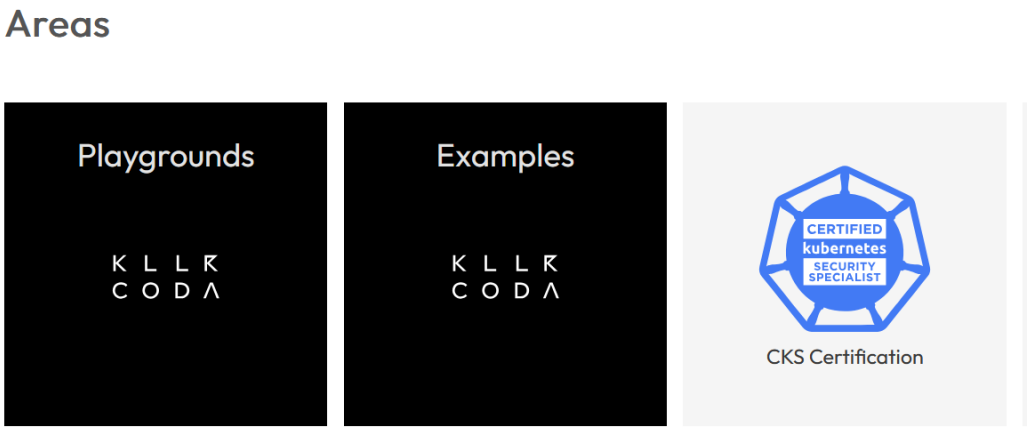



CLI stands for **Command Line Interface**. It is a type of user interface that allows users to interact with a computer system by typing commands into a console or terminal. Unlike a GUI, which uses graphical elements, a CLI relies entirely on text-based input and output.



**Playground: https://killercoda.com/**




**Note: In Linux/Unix Everything is file or directory**

1) mkdir - Creates directories.

Example: mkdir new_directory

2) touch – Creating a file.

Example: touch filename

3) ls - Lists directory contents.

Example: ls -l

4) cd - Changes the current directory.

Example: cd /home/user

5) pwd - Prints the current working directory.

Example: pwd

6) cp - Copies files or directories.

Example: cp source.txt destination.txt

7) mv - Moves or renames files or directories.

Example: mv oldname.txt newname.txt

8) rm - Removes files or directories.

Example: rm file.txt

9) rmdir - Removes empty directories.

Example: rmdir empty_directory

touch - Creates an empty file or updates the access and modification times of a file.

Example: touch newfile.txt

10) echo - Displays a line of text or a variable value.

Example: echo "Hello, World!"

11) cat - Concatenates and displays file content.

Example: cat file.txt

12) less - Views file content one screen at a time.

Example: less file.txt

13) grep - Searches for patterns within files.

Example: grep "pattern" file.txt

14) date- print the date

Example: date

15) clear- clear the screen

Example: clear

## vi editor

The **vi editor** is a powerful text editor that is commonly found on Unix and Linux systems. It was created by Bill Joy in 1976 and is renowned for its efficiency and ability to handle large files. The **vi** editor is modal, meaning it operates in different modes that provide various functionalities. The modern enhanced version of **vi** is called **Vim** (Vi Improved).

## Key Modes in vi:

1. **Normal Mode**: This is the default mode where you can navigate the text and use commands to manipulate text.
2. **Insert Mode**: In this mode, you can insert and edit text.
3. **Visual Mode**: Used for selecting blocks of text to perform operations on them.
4. **Command Mode**: This is where you can enter commands to save, quit, or perform other operations. You enter this mode by pressing: from Normal mode.

## Switching Between Modes:

- **Normal to Insert Mode**:
    - i: Insert before the cursor
    - a: Append after the cursor
    - o: Open a new line below the cursor
- **Insert to Normal Mode**:
    - Esc
- **Normal to Visual Mode**:
    - v: Character-wise visual mode
    - V: Line-wise visual mode
- **Normal to Command Mode**:
    - :

## Basic Navigation in Normal Mode:

- h: Move left
- j: Move down
- k: Move up
- l: Move right
- 0: Move to the beginning of the line
- $: Move to the end of the line
- w: Move to the beginning of the next word
- b: Move to the beginning of the previous word

**Editing Text:**

- x: Delete the character under the cursor
- dd: Delete the current line
- yy: Yank (copy) the current line
- p: Paste after the cursor
- u: Undo the last change
- Ctrl + r: Redo the undone change

**Saving and Exiting:**

- :w: Save the file
- :q: Quit vi
- :wq or ZZ: Save the file and quit
- :q!: Quit without saving

**Example Workflow:**

1. Open a file in vi: vi filename
2. Navigate to the location where you want to edit.
3. Press i to enter Insert mode and make your changes.
4. Press Esc to return to Normal mode.
5. Save and exit by typing :wq and pressing Enter.