Operating Systems Project

References used:

XV-6 Basics learnt: https://www.youtube.com/@hhp3
XV-6 git repo: https://github.com/mit-pdos/xv6-public

Modifications that can be done with two intentions:

1. Helpful
2. Annoying

Helpful:

Broad categories of changes to be done:

1. Auto correct
    a. Auto correct a few words
    b. Shortcuts to some words - user may decide (Karan)
2. Accessibility features (Pari)
    a. Switch between qwerty and dvorak keyboard
    b. Audio when every key is pressed
    c. One press + one release = one input
    d. Sticky keys
    e. Change terminal color (Karan)
3. Automation (Kowshika)
    a. Call functions for repetitive tasks
    b. Emojis
    c. Open certain application, or say automate a task when a key/combination is used

4. Multilingual Modes (Sumeet)
    a. Support for multiple languages

Annoying:

Broad categories of changes to be done:

1. Key mapping Chaos: Change the mapping of keys (Pari)
    a. Letter and number order exchanged
    b. CAPS LOCK reversed
    c. Change backspace to enter and something like that
    d. Print multiple times rather than once
    e. Let space become tab and tab become space

2. Delays in printing: introduce delays before sending the scan code to the display (Sumeet)
    a. Use a delay using for loop

3. Unpredictable shortcuts - change the order and behavior of ctrl, shift , alt and others (Sumeet)
    a. Let ctrl act as shift randomly and others as well
    b. Let the shortcut functionalities be changed like ctrl+c = delete
    c. Let one shortcut - reboot
    d. Add frequently typed shortcut order may be like when a person types **cd**, some random action happens
4. Visual and Sensory irritations: Random noises when keys are clicked, random files open up (Sumeet)
    a. It is basically forking and calling the using execl() system call

Codes that must be modified:

1. kbd.c
2. kbd.h

Both of them comprise the driver of the keyboard of xv-6.