



# Vim Introduction

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- Terminal
- Vim Basics
- Tutorial #1 in Gulliver's Travels
- Tutorial #2 in Python
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# Terminal

- What is Terminal?

# Terminal

- What does this mean?

## No Desktop Environment Utilities

- Window Mechanism
- Clip Board
- Mouse
- .....

# Terminal

- How do you write program painlessly?

## **Use Powerful Text Editors**

# Vim Basics

- Switch Files
- Read
- Navigate
- Edit

# Vim Basics

- Why Vim?

Light weight

Nearly every machine

E.g.    A smart toaster

# Vim Basics

- Why Vim?
  - Text Editor  
Notepad++, Sublime, EmEditor, VS Code
  - IDE  
Visual Studio, JetBrains, Jupyter, Eclipse, R Studio



# Vim Basics

- Vim is complicated but not tough to learn.
- Be patient and Try more

# Vim Basics

- Install it
  - RedHat/CentOS: `yum install vim`
  - Debian/Ubuntu: `apt-get install vim`
  - Arch/manjaro: `pacman -Su vim`
  - Alpine: `apk add vim`

# Vim Basics

- Install it

Make sure you got the “Huge version”

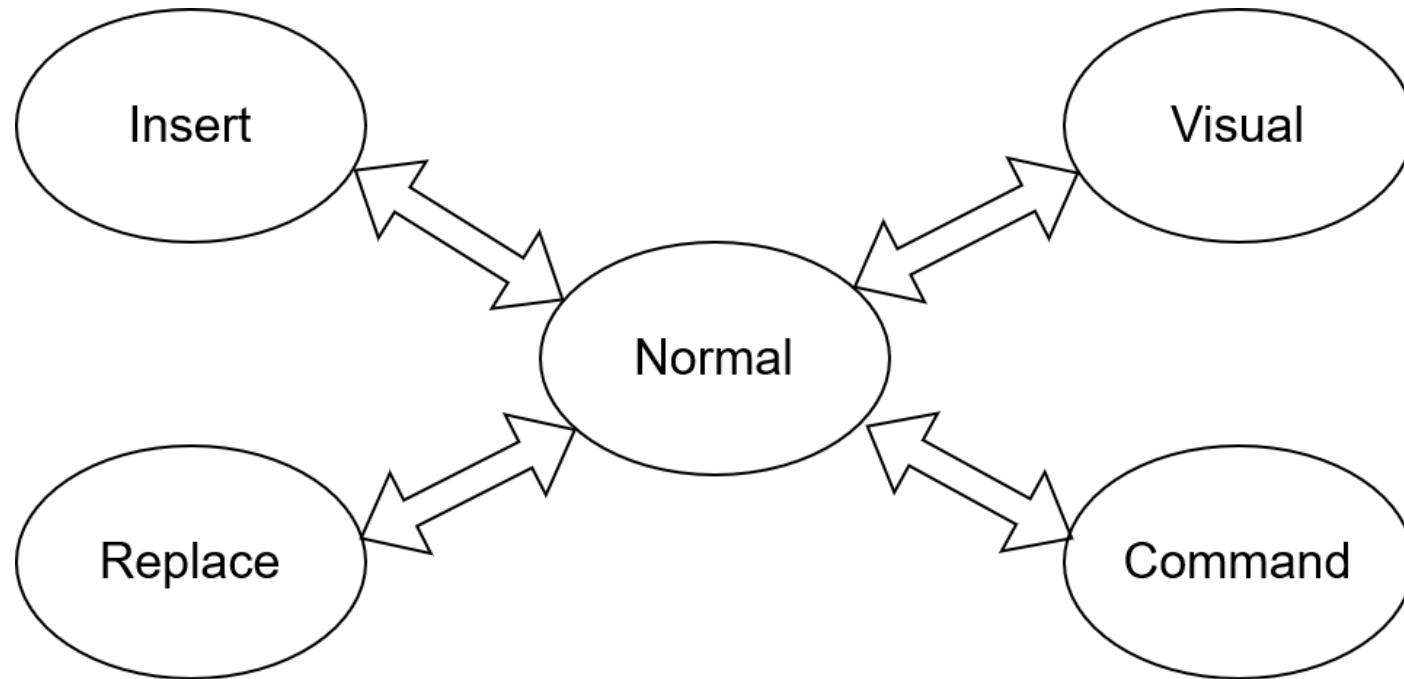
```
haolin@haolin-virtual-machine:~$ vim --version
VIM - Vi IMproved 8.1 (2018 May 18, compiled Feb 01 2022 09:16:32)
Included patches: 1-2269, 3612, 3625, 3669, 3741
Modified by team+vim@tracker.debian.org
Compiled by team+vim@tracker.debian.org
Huge version with GTK3 GUI.  Features included (+) or not (-):
+acl            -farsi            -mouse_sysmouse  -tag_any_white
+arabic         +file_in_path      +mouse_urxvt     +tcl
+autocmd        +find_in_path      +mouse_xterm     +termguicolors
+autochdir      +float             +multi_byte      +terminal
-autoservername +folding           +multi_lang      +terminfo
```

# Vim Basics

- What matters?
  - **Cursor** -> motion
  - Buffer(File)
  - Window

# Vim Basics

- Modes



# Vim Basics

- Modes
  - Normal

Move cursor, screen; Change file; Switch to other modes
  - Insert/Replace

Regular text Edit mode
  - Visual

Selection text & visualize it
  - Command

Use command to interact with vim

# Vim Basics

- Prepare Material

```
mkdir vim_intro && cd vim_intro
```

```
curl https://raw.githubusercontent.com/attr0/Vim-Intro/main/VIM%20Introduction.zip -o vim_intro.zip
```

```
Unzip vim_intro.zip
```

# Tutorial #1

- Gulliver's Travels

```
vim Gullivers_Travels.txt
```



# Tutorial #1

- Motion

H: Left

L: Right

J: Down

K: UP



# Tutorial #1

- Motion

Move a unit of a word:  
w, W, b, B, e



# Tutorial #1

1-9: Repeat the following action

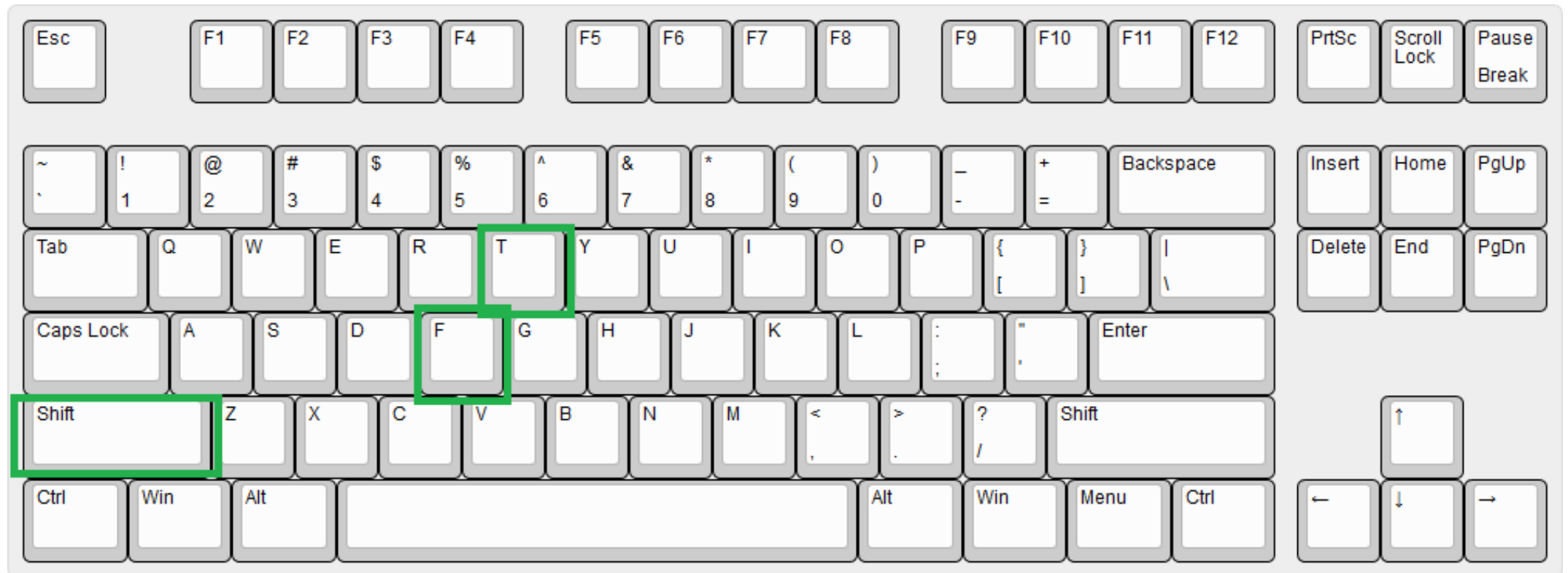
- Repeat



# Tutorial #1

- Motion

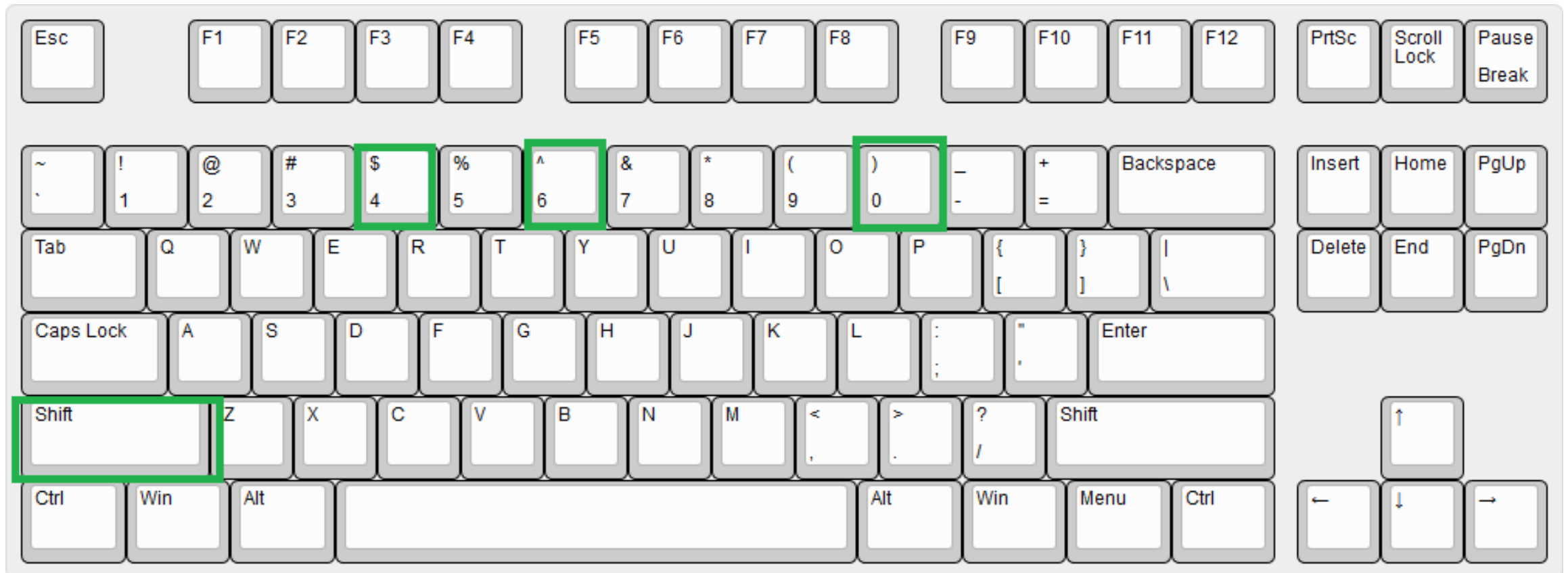
`f[key]`, `t[key]`: Move to `[key]` in right  
`F[key]`, `T[key]`: Move to `[key]` in left



# Tutorial #1

^: First character, \$: END  
0: Home

- Motion



# Tutorial #1

- Motion

gg: start of the article

G: end of the article

[number]gg, G: Jump to line

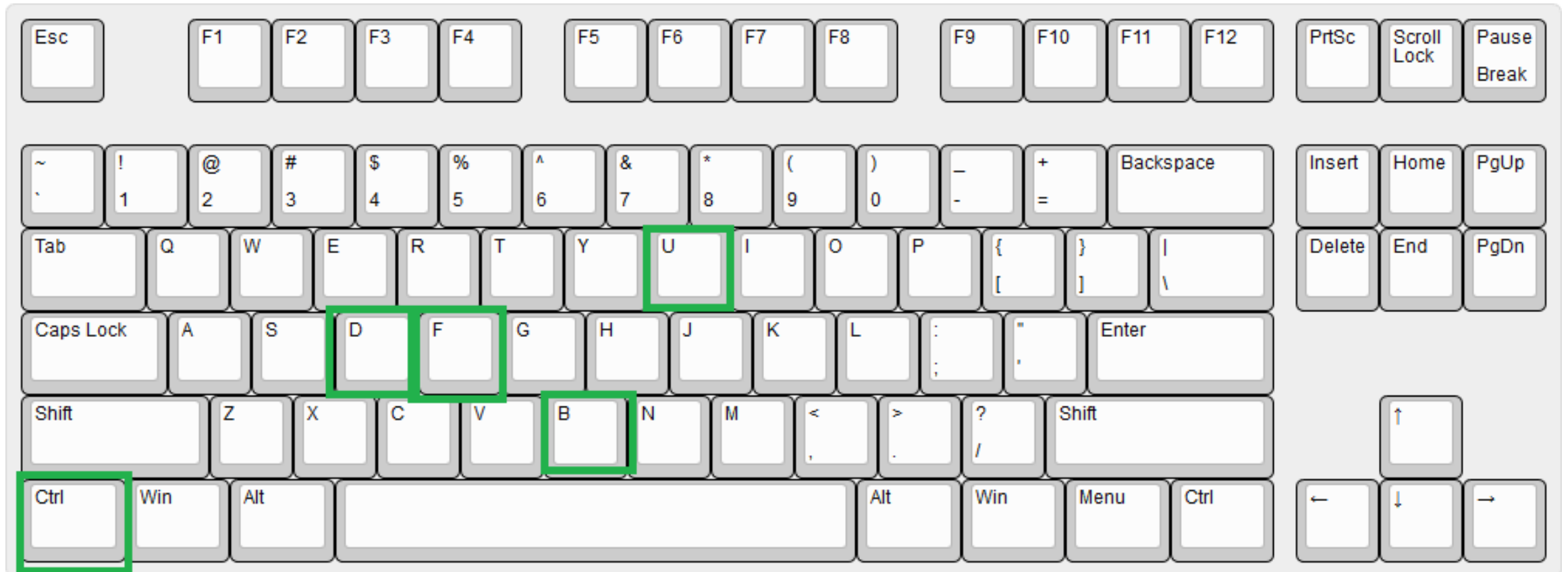
Ctrl+g: display the position



# Tutorial #1

Ctrl+u, Ctrl+b: Page Up  
Ctrl+d, Ctrl+f: Page Down

- Screen



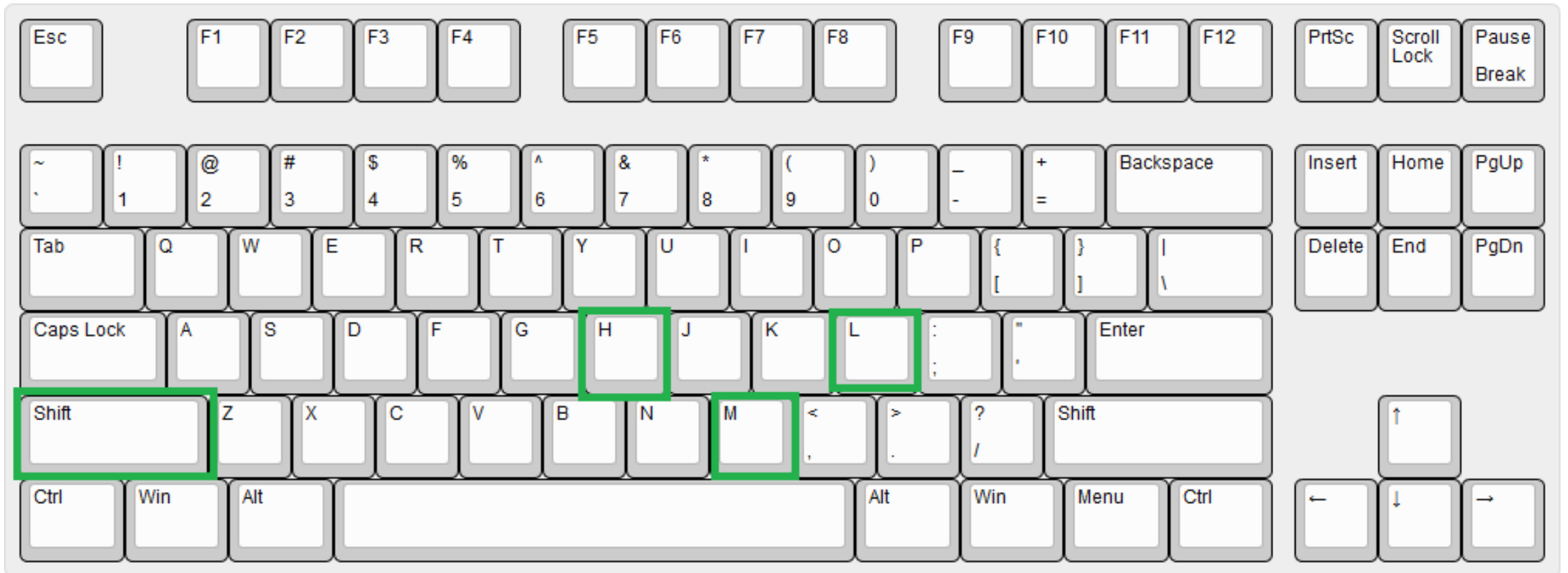
# Tutorial #1

H: top of the screen

M: middle of the screen

L: low of the screen

- Motion

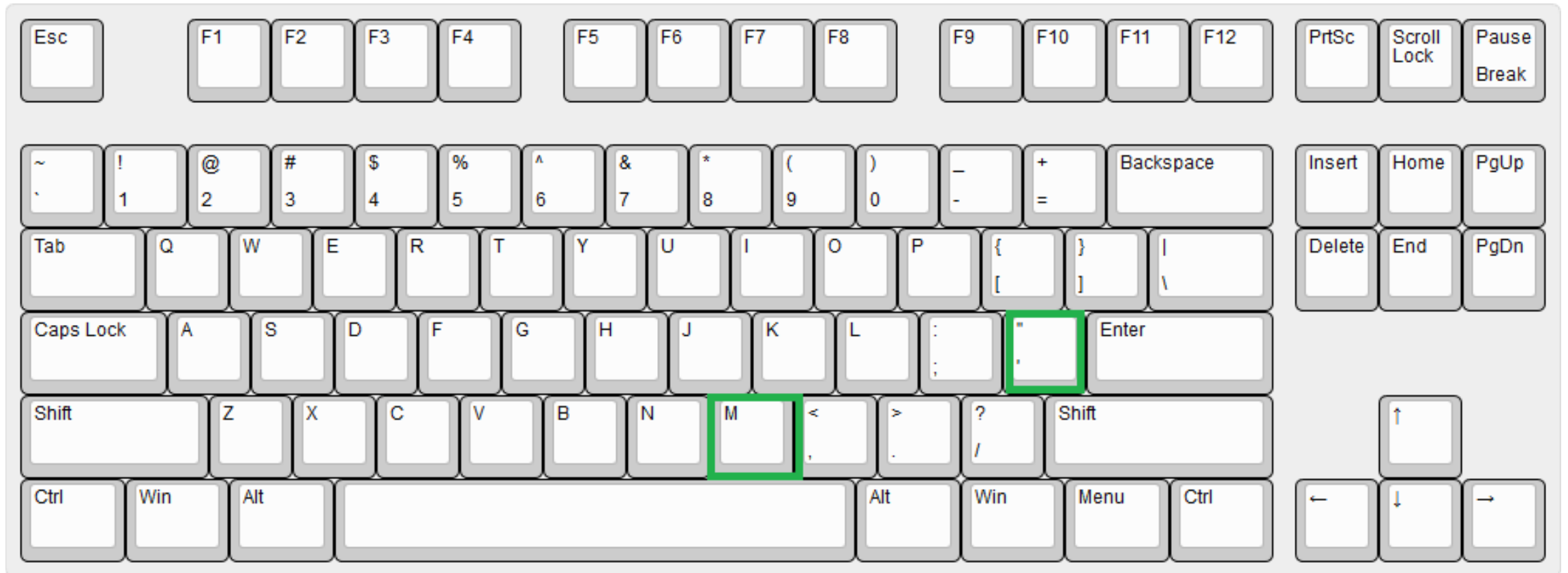




# Tutorial #1

`m[key]`: add a mark & store it on `[key]`  
`'[key]`: jump to a mark

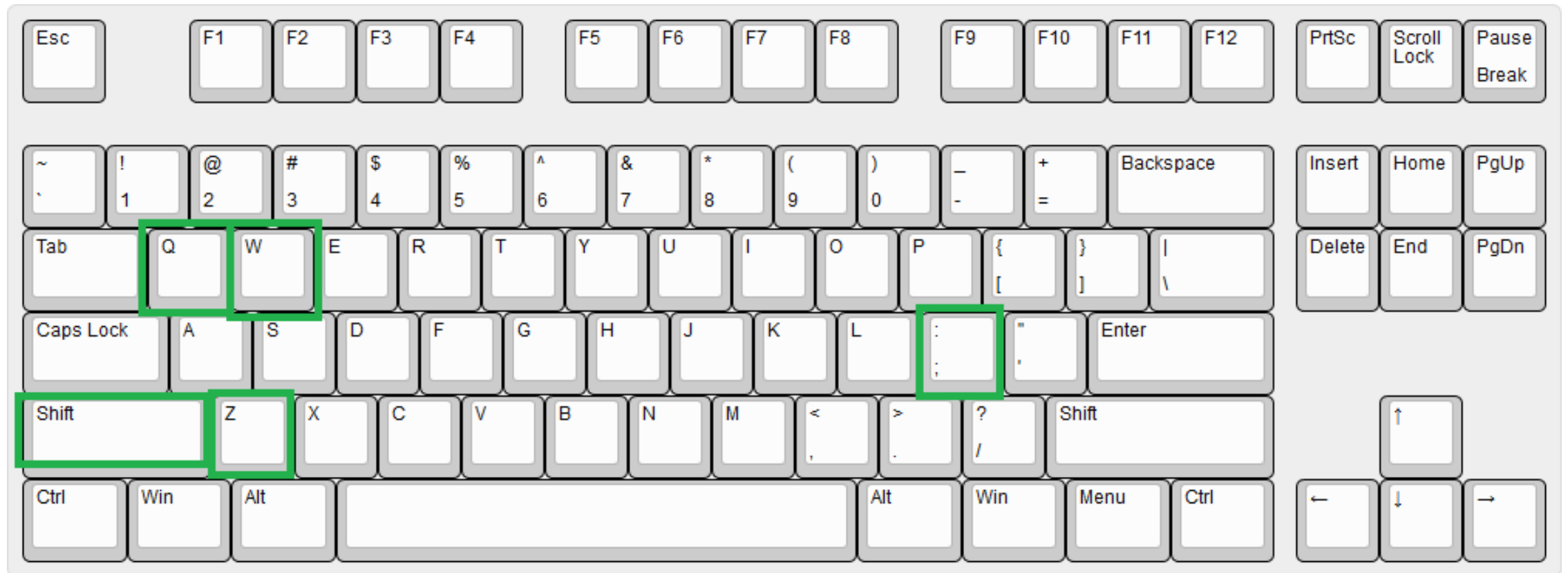
- Motion



# Tutorial #1

:q, :qa, :q!, :wq, :x  
ZZ, ZQ

- Quit



# Tutorial #1

- Great, you know how to use vim as a text viewer

# Tutorial #2

- Get all prime numbers between 10 and 1000

Prime number has only two factors, 1 and itself

# Tutorial #2

- Configuration

In ~/.vimrc

```
set num
set ts=4
set sw=4
set et
Syntax on
filetype on
filetype indent on

set mouse=a
set laststatus=2
set hls
```

# Tutorial #2

i: insert, I: insert at ^  
a: append, A: append at \$

- Text Edit



# Tutorial #2

o: open a new line below  
O: open a new line above

- Text Edit



# Tutorial #2

r: replace a character  
R: into Replace Mode

- Text Edit





# Tutorial #2

u: undo  
Ctrl+r: redo

- Text Edit



# Tutorial #2

d[motion], dd, D  
c[motion], cc, C  
X, S

- Text Edit



# Tutorial #2

dw, dW, db, dB, de  
diw, daw  
c[motion]

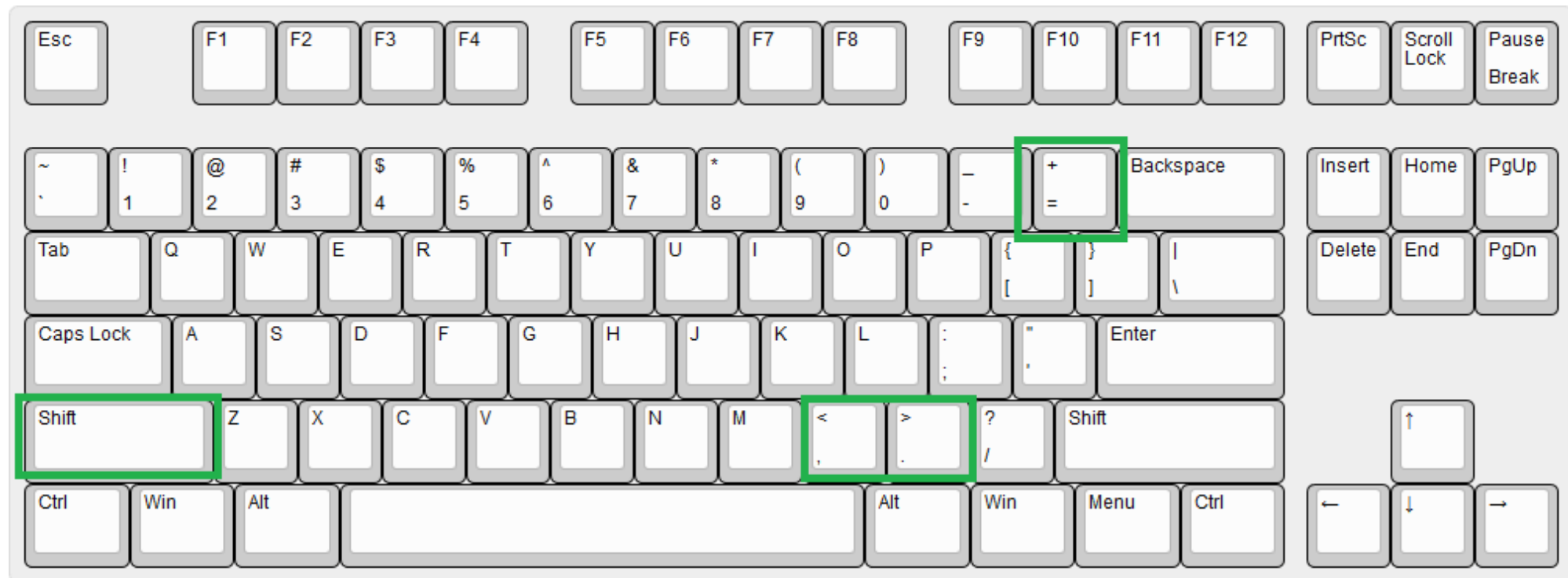
- Text Edit



# Tutorial #2

<<, >>, ==: del/add/auto indent

- Text Edit



# Tutorial #2

.: repeat the last change

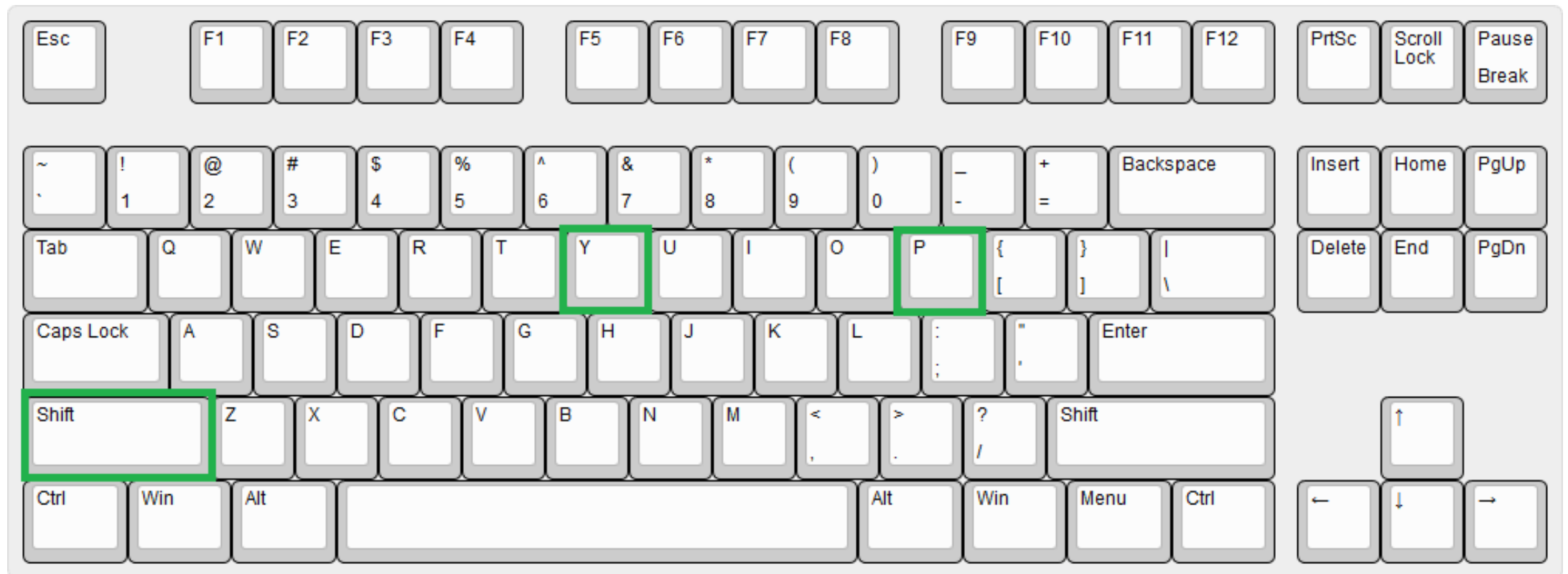
- Text Edit



# Tutorial #2

y: Copy(yank), yy, Y: Copy the line  
p: paste below, P: paste above

- Text Edit



# Tutorial #2

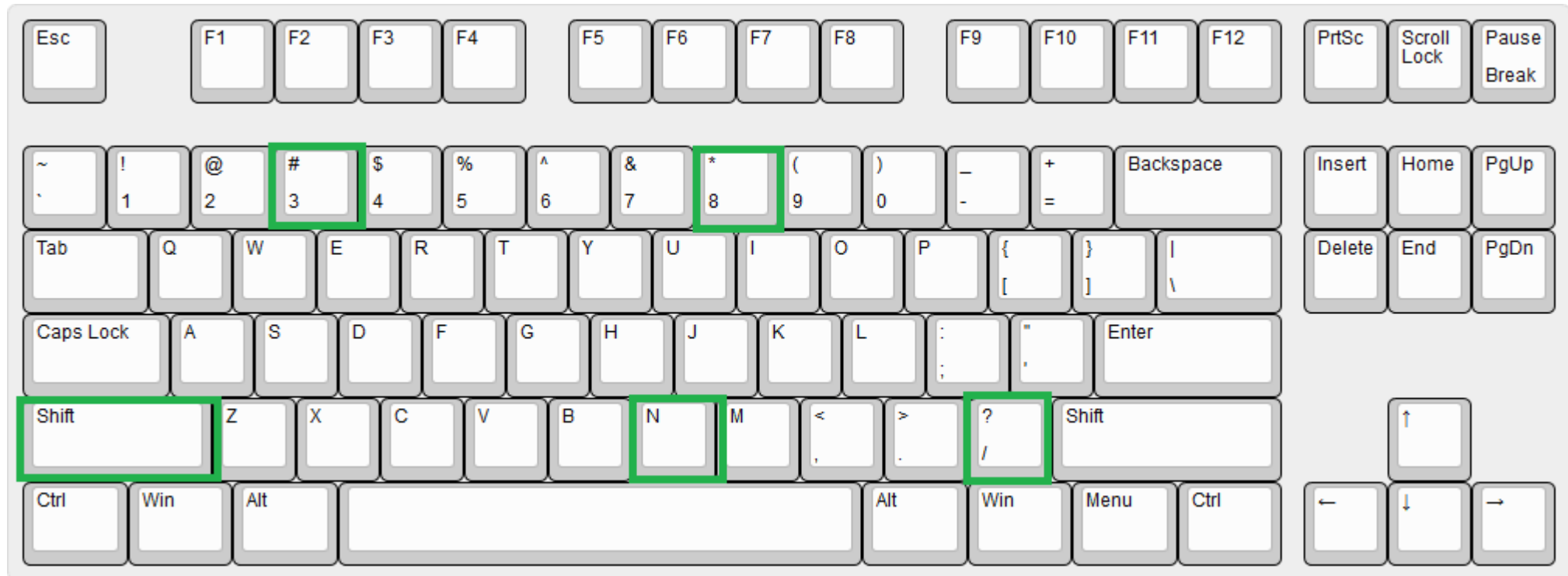
- Text Search

`/`: search below (use `n/N` to switch)

`?`: search above

`*`: search the current word below

`#`: search the current word above



# Tutorial #2

`:s/<old>/<new>:` replace

`:%s/<old>/<new>:` replace in all lines

- Text Search

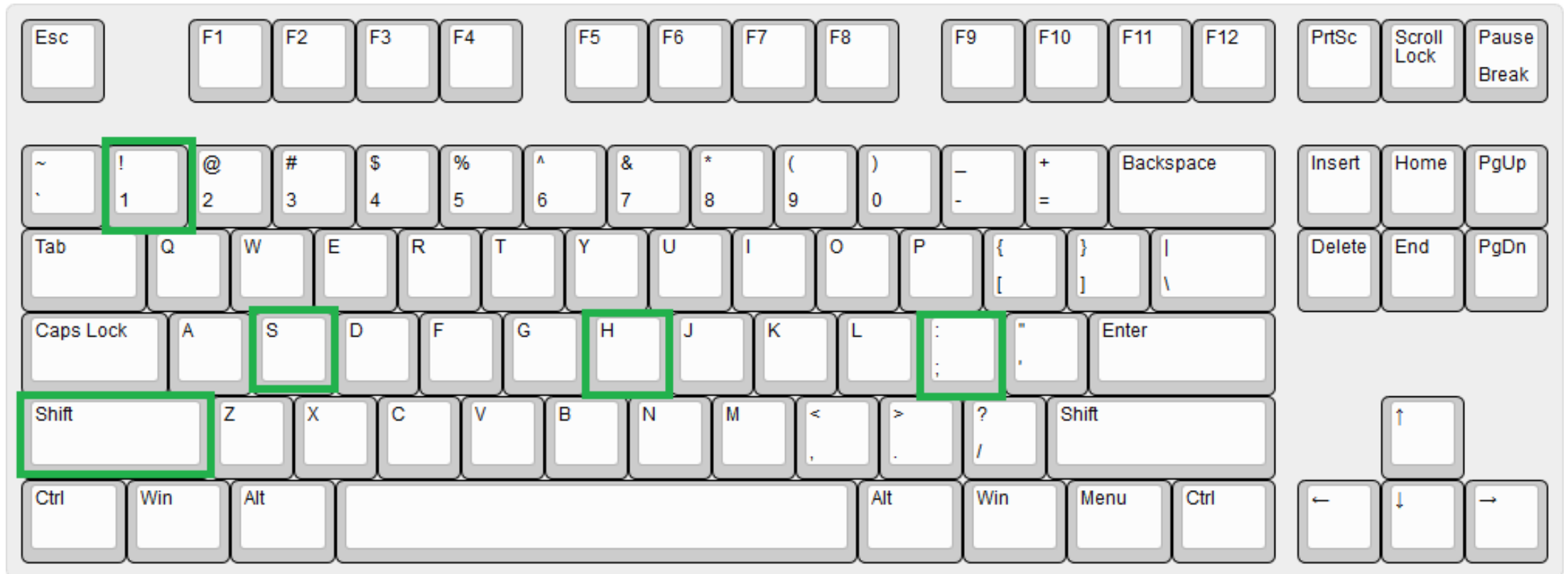




# Tutorial #2

:!`<command>`: run external command  
:sh open a shell

- Text Search



# Tutorial #2

- Vim is a proper editor for you

# Tutorial #3

- My Zoo

Animal

Dog can bark!

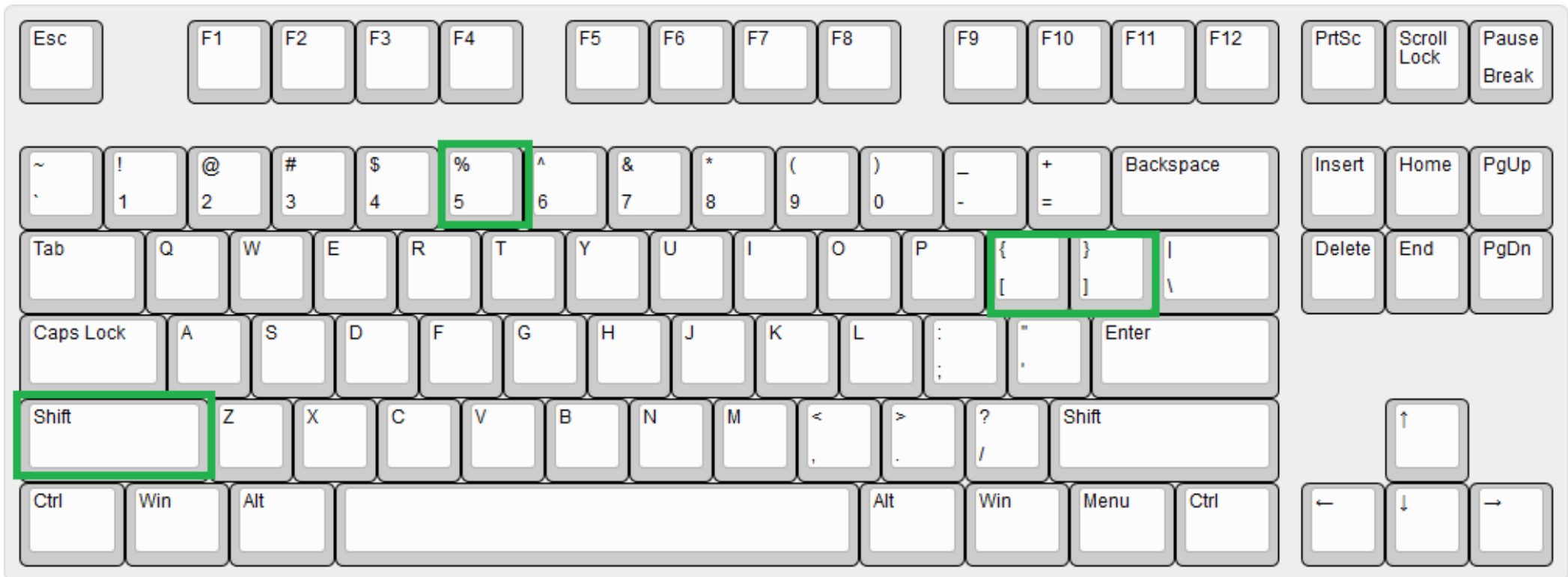
Cat can meow~

# Tutorial #3

- Motion

`%` : jump to the other parentheses

`{, }`: jump to the previous/next paragraph



# Tutorial #3

`v[motion]`: Visual Mode  
`V[motion]`: Visual-Line Mode  
`Ctrl+v[motion]`: Visual-Block Mode

- Text Selection

`vi[motion]`, `va[motion]`



# Tutorial #3

- Text Selection

1. Enter visual mode
2. Use your mouse



# Tutorial #3

After selection:

d, c, y, I, x, ~, :s

- Text Edit

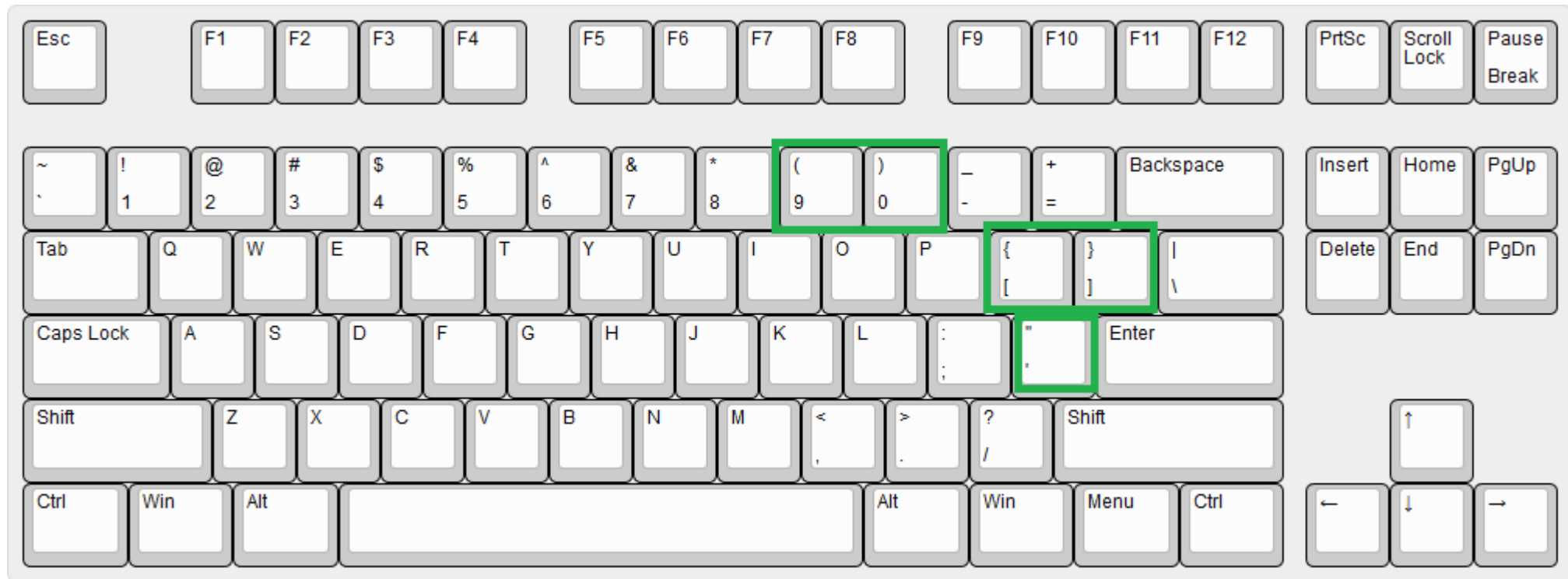
(Multiply line mode behaves differently)



# Tutorial #3

- Text Edit

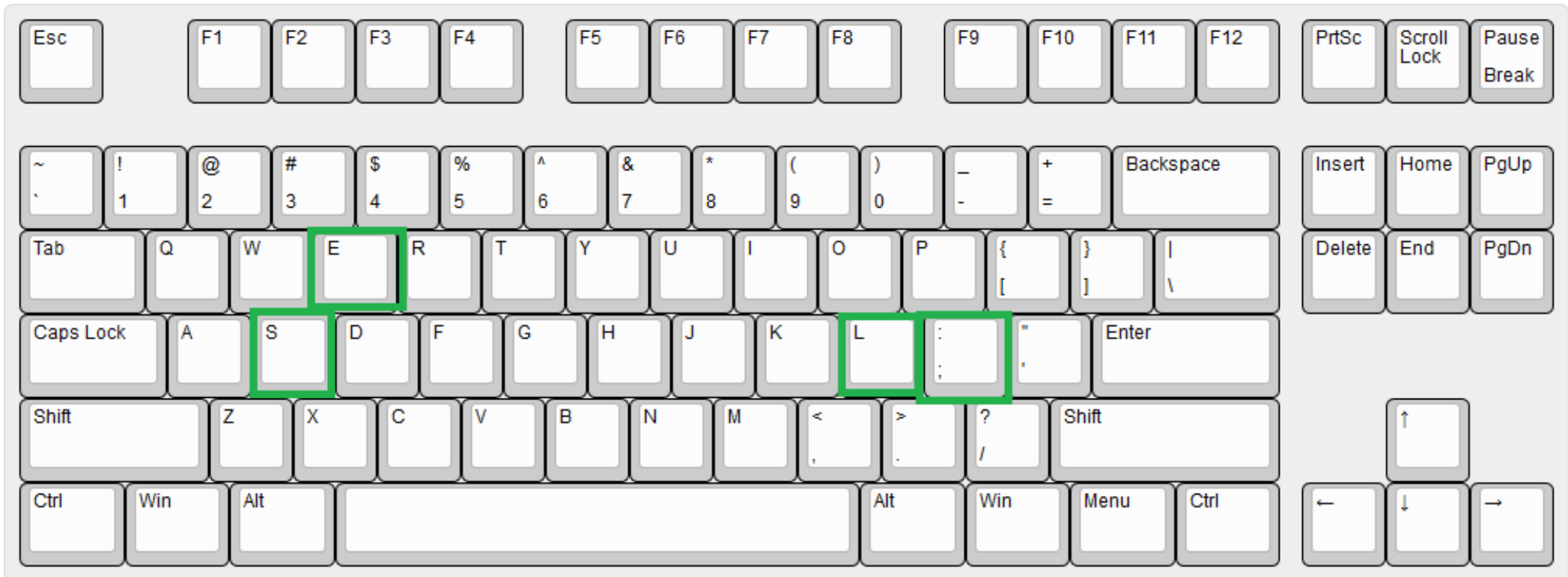
```
vi[key], va[key]  
di[key], da[key]  
ci[key], va[key]
```





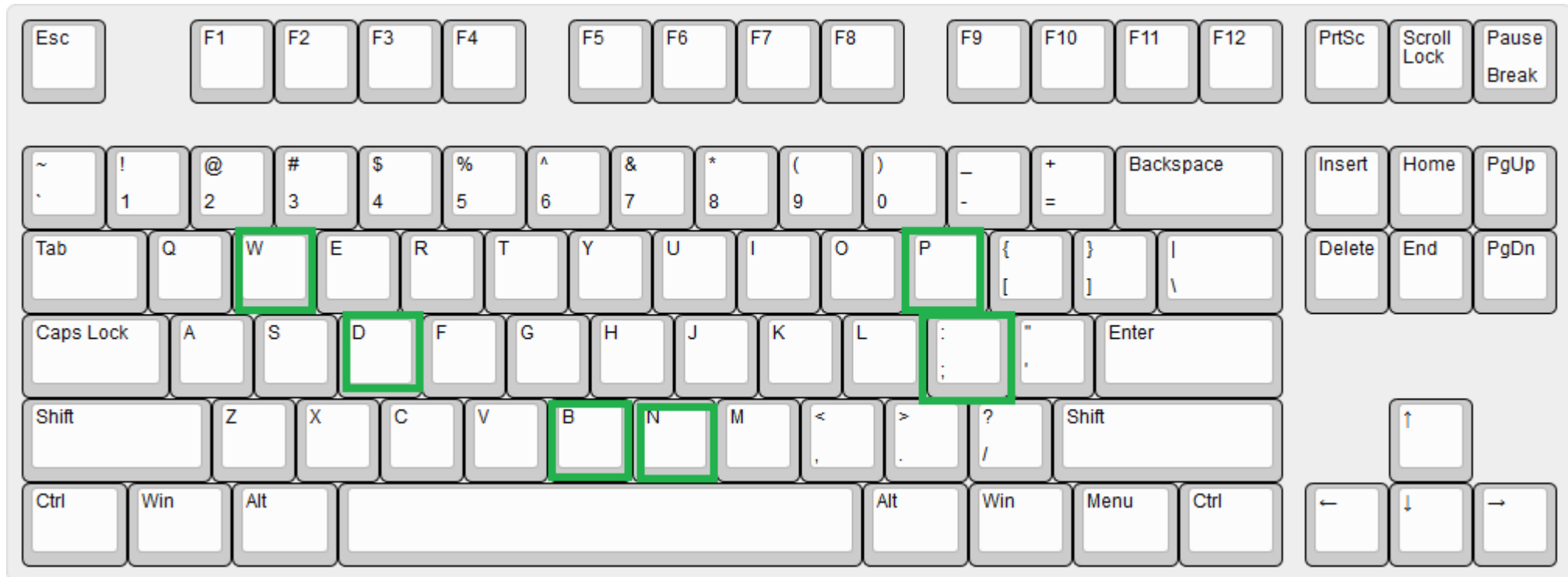
# Tutorial #3

- vim [filepath\_1] [filepath\_2] ...
- :edit [filepath]
- Buffer(File) Open
- :ls: list all buffers



# Tutorial #3

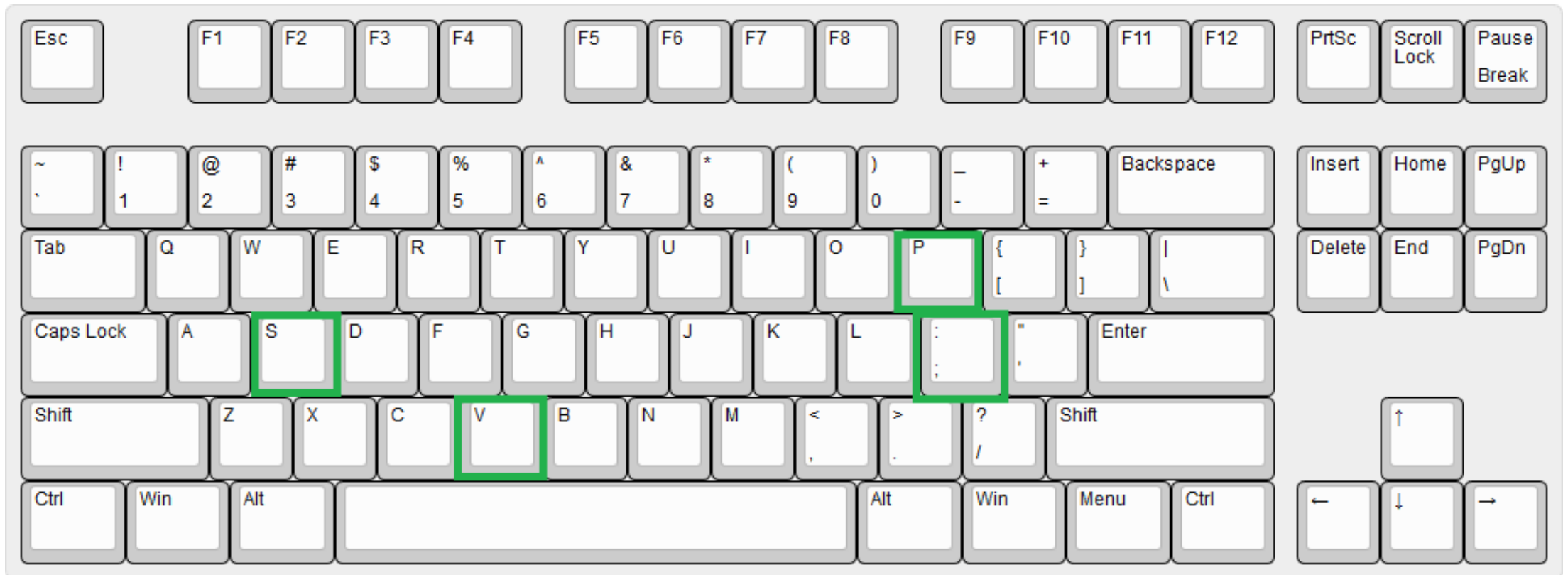
- Buffer(File) Switch
  - :bn, :bp: switch to the next/previous buffer
  - :b[number]: switch to a given buffer
  - :bd, :bw: del/save & close the current buffer



# Tutorial #3

- Window Split

- `vim -o/-O [filepath_1] [filepath_2] ...`
- `:sp, :vsp`: horizontal/vertical split]
- `:only`: display only one window
- `:q`: close the current window



# Tutorial #3

- `Ctrl+w+ +/-`: increase/decrease height
- `Ctrl+w+ </>`: widen/narrow

- Window Resize

Tip: use numbers to repeat the action



# Tutorial #3

- `Ctrl+w+ h/j/k/l`: move the cursor to another window
- Window



# Tutorial #3

- Swap file

Lost connection, power, or hardware issues?

`.<file_name>.swp` holds all your changes

# More

- Regular Expression
- Key Mapping
- Macro
- Plugins
- Language Related Tools
- ...



# Thank You

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