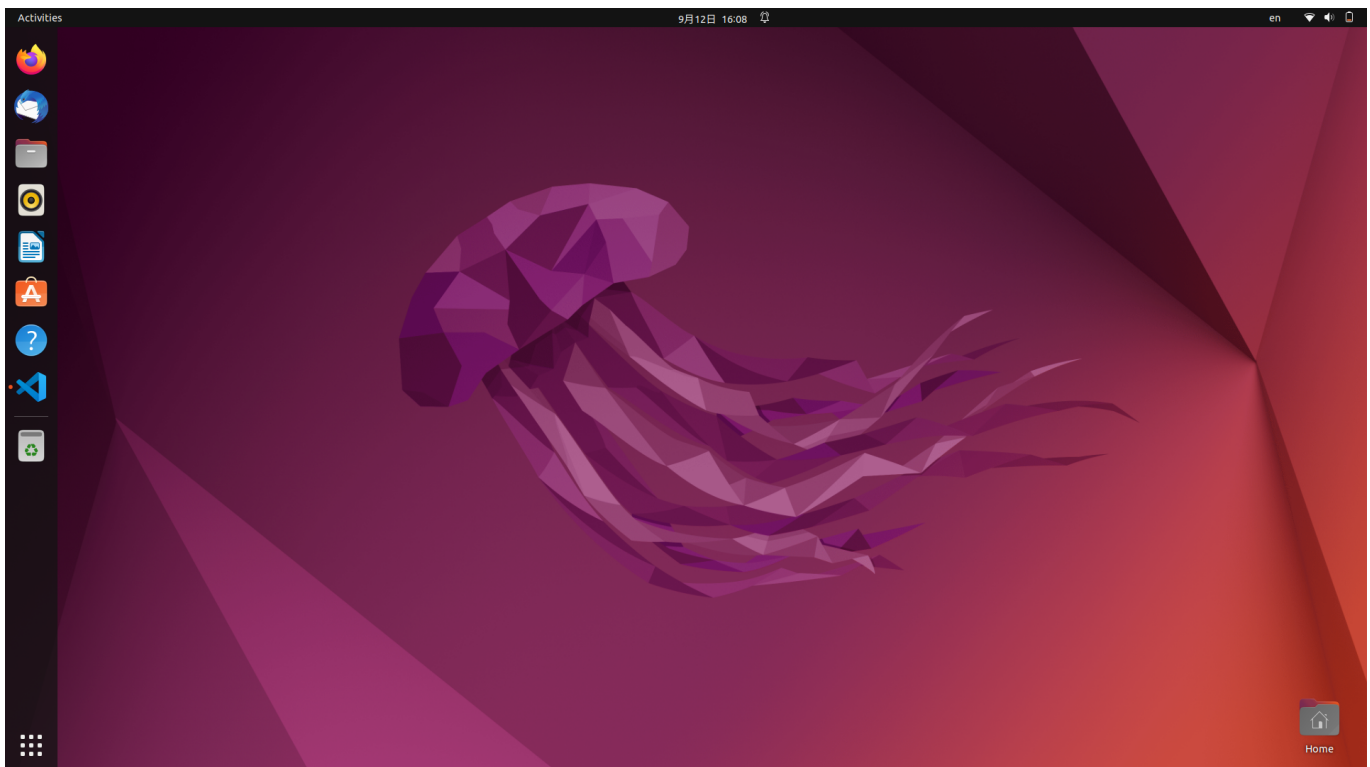


Report for ICS PA0

by 项远方 (221300012)

Part I: installing GNU\Linux

Downloaded the image of `ubuntu 22.04` from THU tuna mirrors, created a bootable USB stick, and completed the installation setup of `ubuntu 22.04`.



Part II: installing tools

Have met some major problems here. When using `apt-get install` to install package, it failed to deal with some problems in package dependence. So I was unable to install `git`, `libSDL2-dev` and `llvm` due to the version of some packages they depend on was higher than required.

I tried to downgrade the packages manually at first, but deleted some vital system files by mistake and caused some fatal error in launching ubuntu. I reinstalled ubuntu to make up this mistake, but the package dependence problem was not solved.

After STFW, the final solution was installing another package manager `aptitude` through `apt`, and successfully downgraded and installed packages through command `sudo aptitude install <package>`.

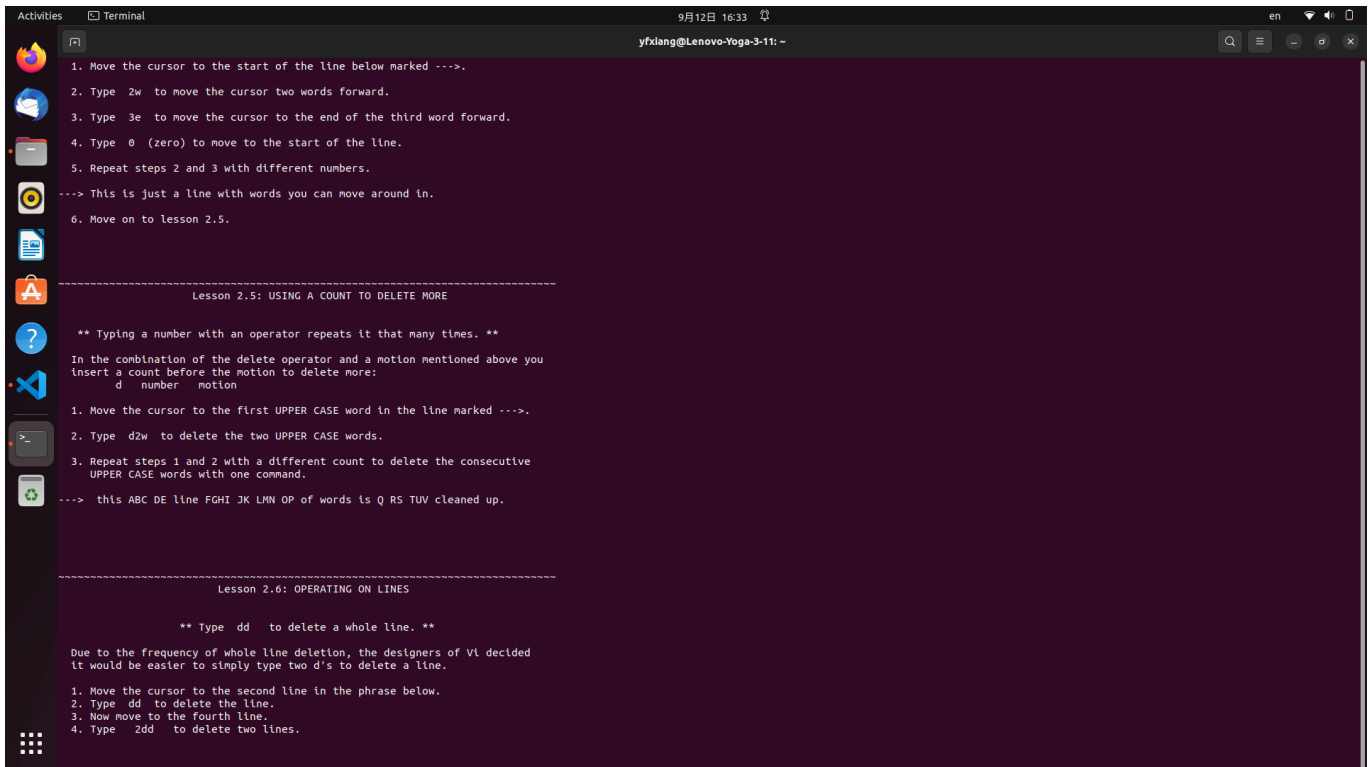
I forgot to save a screenshot when dealing with this problem.

successfully completed other tasks, including checking network state, setting package source, and installing Chinese input method.



Part III: learning to use vim

Learned the use of **vim** through **vimtutor**. Tried to enable features as syntax highlight, setting **Tab** width, etc. through modifying **.vimrc**.



Part IV: other configurations

Installed **tmux**.

pulled the source codes of PA from PA's remote repo, completed the configuration of PA project directory. Created a new branch **pa0**, modified username in the **makefile** and added **TOKEN** to environment variable. Finally tried to compiled **NEMU** for the first time through **makefile**.

```
Activities Terminal 9月12日 16:47 en yfxiang@Lenovo-Yoga-3-11: ~
69 PS1="\[\e]0;$${debian_chroot:+($debian_chroot)}\u@\h: \w\a]${PS1}"
70 ;;
71 *)
72 ;;
73 esac
74
75 # enable color support of ls and also add handy aliases
76 if [ -x /usr/bin/dircolors ]; then
77     test -r ~/.dircolors && eval "$(dircolors -b ~/.dircolors)" || eval "$(dircolors -b)"
78     alias ls='ls --color=auto'
79     #alias dir='dir --color=auto'
80     #alias vdir='vdir --color=auto'
81
82     alias grep='grep --color=auto'
83     alias fgrep='fgrep --color=auto'
84     alias egrep='egrep --color=auto'
85 fi
86
87 # colored GCC warnings and errors
88 export GCC_COLORS='error=01;31:warning=01;35:note=01;36:caret=01;32:locus=01:quote=01'
89
90 # some more ls aliases
91 alias ll='ls -l'
92 alias la='ls -A'
93 alias l='ls -CF'
94
95 # Add an "alert" alias for long running commands. Use like so:
96 # sleep 10; alert
97 alias alert='notify-send --urgency=low -i "${S7} = 0" && echo terminal || echo error' "${histo
rytail -n1sed -e '\s/\s*[0-9]\s*\s*//;s/[]\s*[]\s*alert/'\''}"
98
99 # Alias definitions
100 # You may want to put all your additions into a separate file like
101 # ~/.bash_aliases, instead of adding them here directly.
102 # See /usr/share/doc/bash-doc/examples in the bash-doc package.
103
104 if [ -f ~/.bash_aliases ]; then
105     . ~/.bash_aliases
106 fi
107
108 # enable programmable completion features (you don't need to enable
109 # this, if it's already enabled in /etc/bash.bashrc and /etc/profile
110 # sources /etc/bash.bashrc).
111 if ! shopt -o posix; then
112     if [ -f /usr/share/bash-completion/bash_completion ]; then
113         . /usr/share/bash-completion/bash_completion
114     elif [ -f /etc/bash_completion ]; then
115         . /etc/bash_completion
116     fi
117 fi
118 export NEMU_HOME=/home/yfxiang/njupa/lcs2023/nemu
119 export AM_HOME=/home/yfxiang/njupa/lcs2023/abstract-machne
120 export TOPIC=chrt4p5v
121
122 Bot
123
124 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/
125 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/
126 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/nemu/
127 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/nemu$ ls
128 build config include Kconfig LICENSE Makefile README.md resource scripts src tools
129 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/nemu$ make
130 + LD /home/yfxiang/njupa/lcs2023/nemu/build/riscv32-nemu-interpret
131 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/nemu$ make clean
132 rm -rf /home/yfxiang/njupa/lcs2023/nemu/build
133 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/nemu$ make
134 + CC src/nemu-main.c
135 + CC src/cpu/cpu-exec.c
136 + CC src/cpu/diffest/dut.c
137 + CC src/cpu/diffest/ref.c
138 + CC src/monitor/sdb/watchpoint.c
139 + CC src/monitor/sdb/sdb.c
140 + CC src/monitor/sdb/expr.c
141 + CC src/monitor/monitor.c
142 + CC src/utils/rand.c
143 + CC src/utils/timer.c
144 + CC src/utils/state.c
145 + CC src/utils/log.c
146 + CC src/memory/vaddr.c
147 + CC src/memory/paddr.c
148 + CC src/device/lo/mio.c
149 + CC src/device/lo/map.c
150 + CC src/device/lo/port-lo.c
151 + CC src/engine/interpreter/hostcall.c
152 + CC src/engine/interpreter/lntr.c
153 + CC src/isa/riscv32/reg.c
154 + CC src/isa/riscv32/init.c
155 + CC src/isa/riscv32/diffest/dut.c
156 + CC src/isa/riscv32/logo.c
157 + CC src/isa/riscv32/system/lntr.c
158 + CC src/isa/riscv32/system/mmu.c
159 + CC src/isa/riscv32/inst.c
160 + OX src/utils/dtasm.cc
161 + LD /home/yfxiang/njupa/lcs2023/nemu/build/riscv32-nemu-interpret
162 yfxiang@Lenovo-Yoga-3-11:~$ cd njupa/lcs2023/nemu$
```

关于提问方法的阅读报告

计算机学科作为一门由大量前人的研究成果和实践积累而成的工科学科，有大量前人的经验可供我们借鉴。学习、借鉴其他人的思路 and 实践经验，即使对于专业人员也非常重要，对于我们这样的计算机学科的学习者，更是学习知识、提高水平的关键途径。

借鉴前人经验的方法通常有二。在互联网或手册查询相关资料，是首先应当考虑的途径。而“提问的智慧”则指导我们，在采取上网搜索、查阅手册等多种方法无果后，也可以且有必要提出问题，以待经验更丰富的人提供解决思路，而提问时则更需要采取适当的方式，才更有可能的答案。

首先，在遇到问题时应当首先上网搜索，并结合网络上前人总结的经验或提出的问题，加以自己尝试各种途径，以求得解决方法。个人认为这是作为计算机类学科的学生，最为关键的一种技术或习惯。毕竟通常我们所遇到的问题，都或多或少有人遇到过，并曾经在互联网上提问并总结。而如果确实无法查询到相关内容，通过查阅手册等获得一些解决问题的思路、或者有些常见的问题已经可以在手册等处找到较为详尽的解决方案。

其次，如果确实无法通过互联网或手册获得解决方案，适当的提问方法也非常重要。所谓“提问的智慧”之要点，首先是尽可能详尽地描述问题相关情况，知晓什么是对解决问题有用的信息，并尽可能多地提供有用的信息，才能使解答者更容易地了解问题情况，并给出建议。其次为良好的态度，并且尽量表现出自己在解决该问题上已经付出的努力。因问答网站或各论坛上的用户均为自愿、无偿地回答问题，因此详略适当、尊重回答者的提问方式至关重要。