

2022 兰州大学开源社区纳新题

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我主要在做人工智能方向,同时也热爱学习 linux ,数据库的相关知识。我参加过国创项目,拿过国奖。但是,我自学的 linux 相关知识比较零散,且还有很多困惑的地方。因此非常希望能够加入开源社区,多向大佬请教,有机会一起做项目。

安装 linux

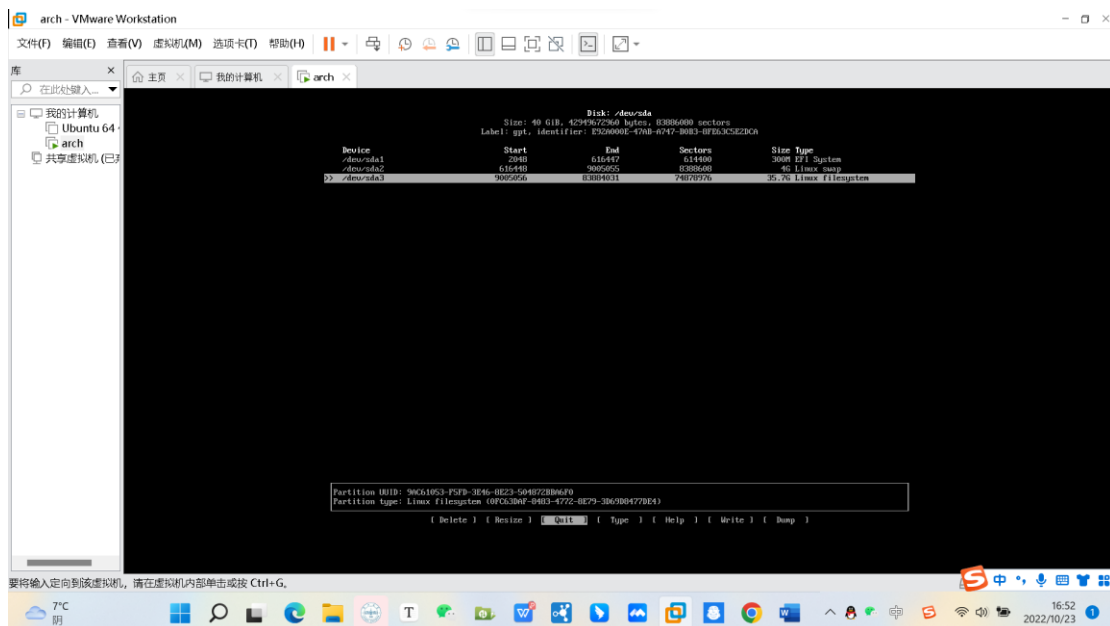
```
arch.vmx - 记事本
文件 编辑 查看
vmotion.svga.multisample2x = "1"
vmotion.svga.multisample4x = "1"
vmotion.svga.msFullQuality = "1"
vmotion.svga.logicOps = "1"
vmotion.svga.bc67 = "9"
vmotion.svga.sm5 = "1"
vmotion.svga.multisample8x = "1"
vmotion.svga.logicBlendOps = "1"
ethernet0.generatedAddress = "00:0c:29:0d:d0:4a"
ethernet0.generatedAddressOffset = "0"
vmci0.id = "-1978806198"
monitor.phys_bits_used = "45"
cleanShutdown = "FALSE"
softPowerOff = "FALSE"
usb:1.speed = "2"
usb:1.present = "TRUE"
usb:1.deviceType = "hub"
usb:1.port = "1"
usb:1.parent = "-1"
svga.guestBackedPrimaryAware = "TRUE"
guestOS.detailed.data = "architecture='X86' bitness='64' buildNumber='rolling' distroName=
firmware = "efi"
usb:0.present = "TRUE"
usb:0.deviceType = "hid"
usb:0.port = "0"
usb:0.parent = "-1"
```

UEFI 启动

GNU GRUB version 2:2.06.r322.gd9b4638c5-4

```
*Arch Linux install medium (x86_64, UEFI)
Arch Linux install medium with speakup screen reader (x86_64, UEFI)
UEFI Shell
UEFI Firmware Settings
System shutdown
System restart
```

Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the commands before booting or 'c' for a command-line. ESC to return previous menu.



创建 efi , swap 分区 , 再挂载

```
vim /etc/pacman.d/mirrorlist
```

换镜像源

```
pacstrap /mnt base linux linux-firmware
```

下载安装软件

```
genfstab -U /mnt >> /mnt/etc/fstab
```

生成 fstab 文件

```
Arch-chroot /mnt
```

进入系统

```
pacman -S vim
```

安装 vim

```
vim /etc/locale.gen
```

本地化设置

```
locale-gen
```

```
vim /etc/locale.conf
```

```
LANG=LANG=en_US.UTF-8
```

设置编码

```
ln -sf /usr/share/zoneinfo/Asia/Shanghai /etc/localtime
```

设置时区

```
hwclock --systohc --utc
```

设置硬件时间

```
pacman -S dosfstools grub efibootmgr
```

安装 grub , 之后再配置 grub

```
passwd
```

设置 root 密码

```
useradd -m -g users -s /bin/bash xshrz
```

创建 xshrz 用户

```
pacman -S dhcpcd
```

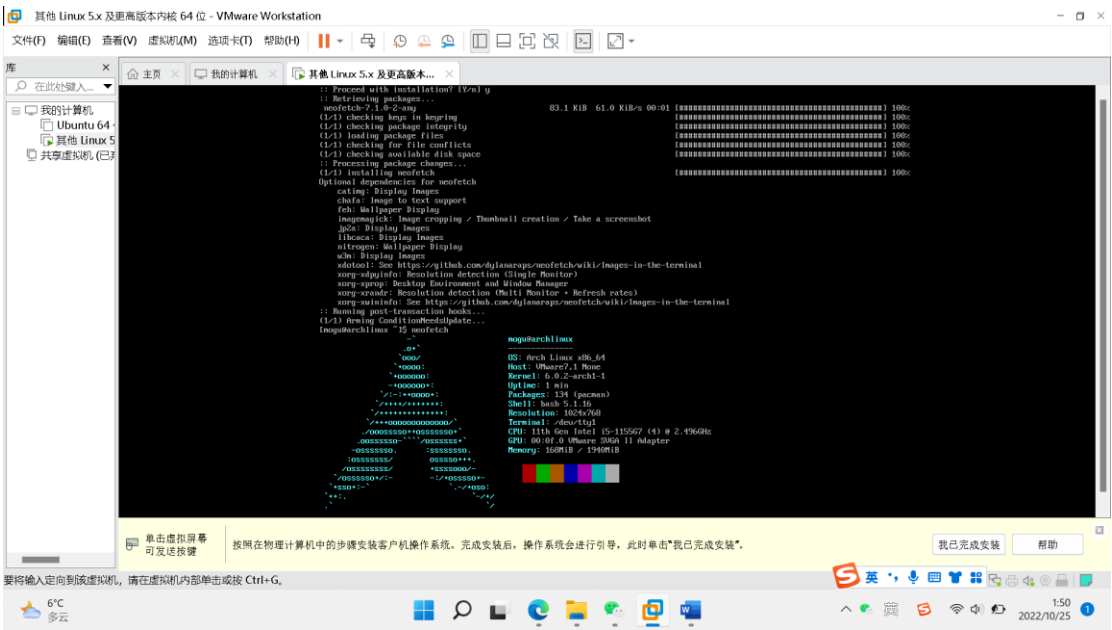
```
systemctl start dhcpcd
```

```
systemctl enable dhcpcd
```

安装并使用 dhcpcd

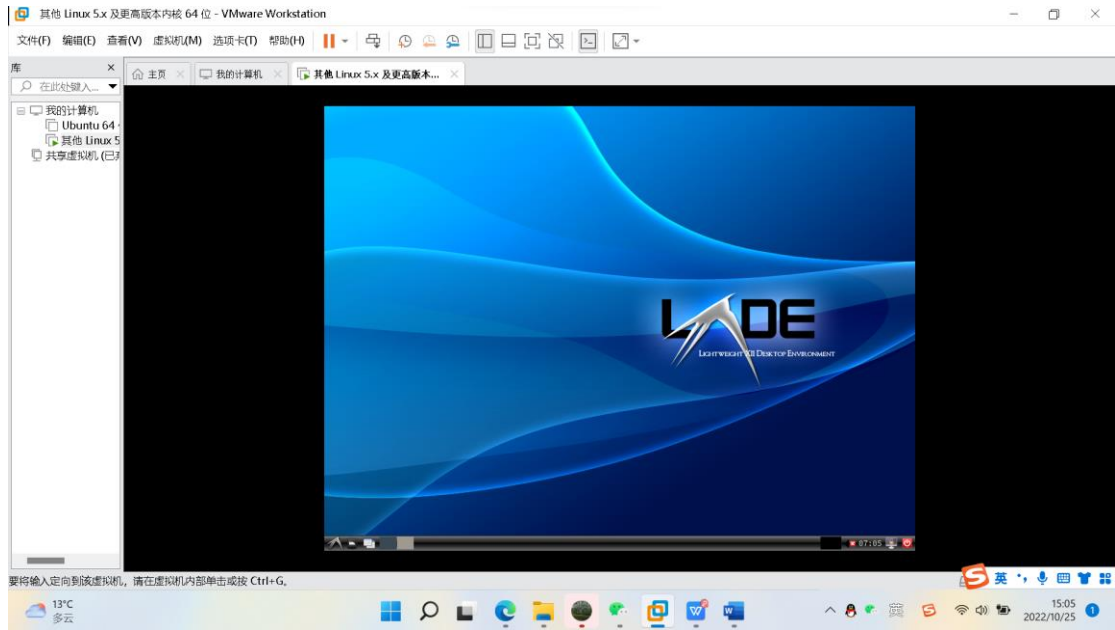
reboot

重启虚拟机

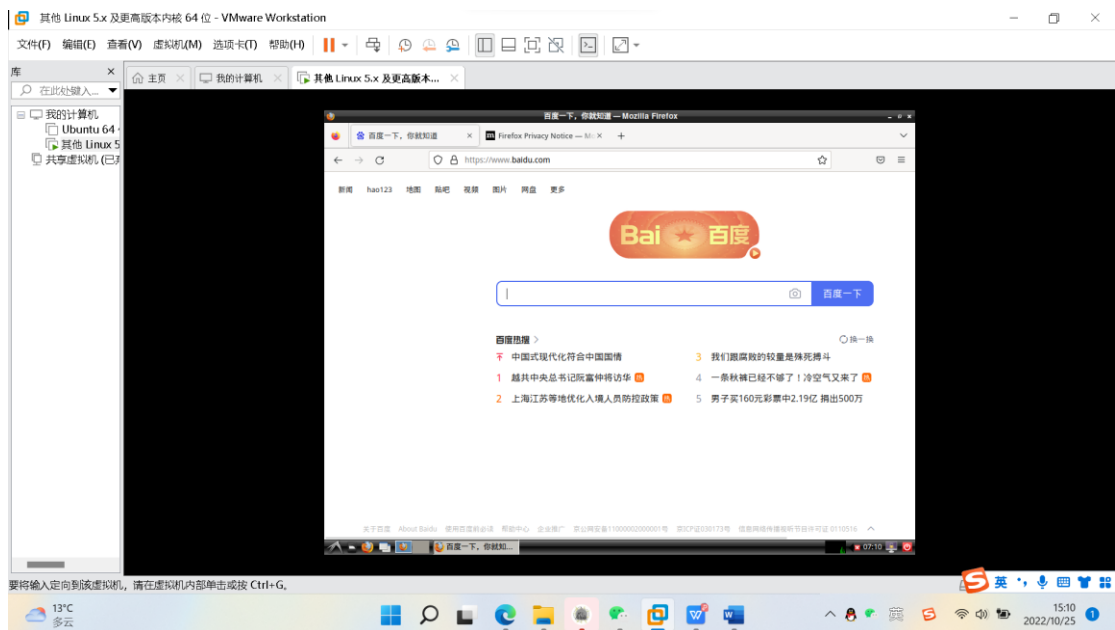


安装成功

Lxde



桌面界面



安装中文字体并打开火狐浏览器

用 clang 编译 linux 内核

wget <https://cdn.kernel.org/pub/linux/kernel/v5.x/linux-5.6.14.tar.xz>

在虚拟机中下载压缩文件

```
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-meta-intel-ipu3.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-meta-uvic.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-meta-vivid.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-meta-vsp1-hgo.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-meta-vsp1-hgt.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-nv12.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-nv12m.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-nv12mt.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-nv16.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-nv16m.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-nv24.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-packed-hsv.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-packed-yuv.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-reserved.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-rgb.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-cs08.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-cs14le.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-cu08.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-cu16le.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-pcu16be.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-pcu18be.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-pcu20be.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-sdr-ru12le.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb10-ipu3.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb10.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb10alaw8.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb10dpcm8.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb10p.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb12.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb12p.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb14p.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb16.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-srggb8.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-tch-td08.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-tch-td16.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-tch-tu08.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-tch-tu16.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-uv8.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-uyvy.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-v4l2-mplane.rst
linux-5.6.14/Documentation/media/uapi/v4l/pixfmt-v4l2.rst
```

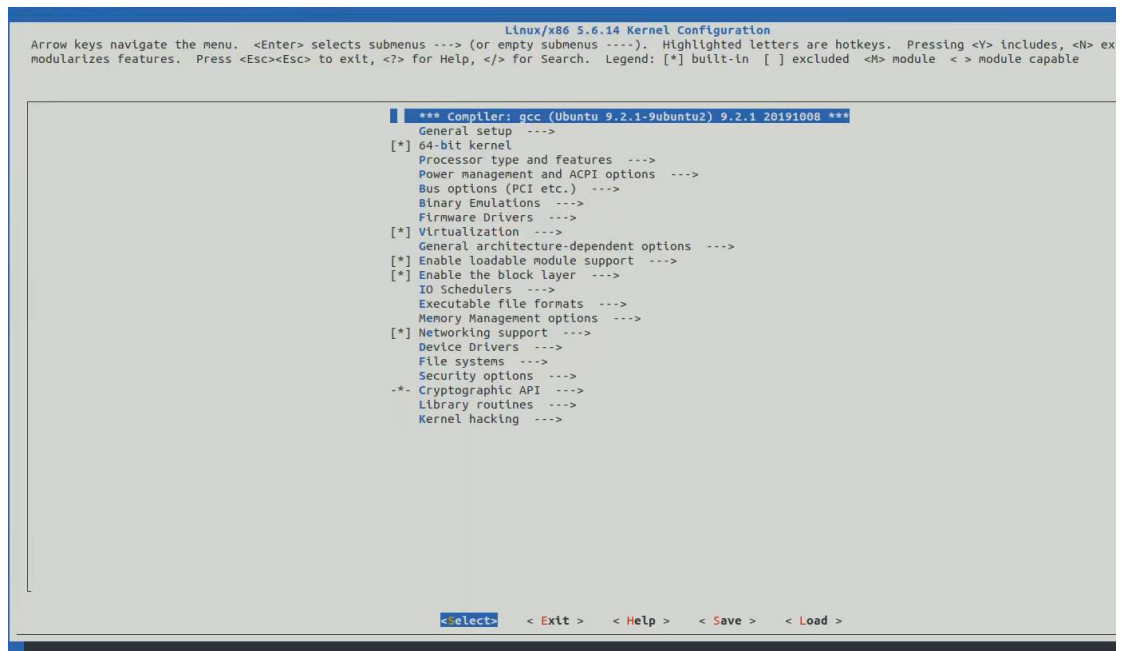
解压缩文件

uname -a

查看版本号

```
test@ubuntu:~/linux-5.6.14$ sudo make menuconfig
HOSTCC scripts/basic/fixdep
*
* Unable to find the ncurses package.
* Install ncurses (ncurses-devel or libncurses-dev
* depending on your distribution).
*
* You may also need to install pkg-config to find the
* ncurses installed in a non-default location.
*
make[1]: *** [scripts/kconfig/Makefile:214: scripts/kconfig/mconf-cfg] Error 1
make: *** [Makefile:568: menuconfig] Error 2
```

进行配置，按照提示安装需要的软件



进入配置窗口，用默认设置

sudo make CC=clang HOSTCC=clang

用 clang 编译内核

```

test@ubuntu:~/linux-5.6.14$ sudo make modules_install
[sudo] password for test:
INSTALL arch/x86/crypto/aegis128-aesni.ko
INSTALL arch/x86/crypto/aesni-intel.ko
INSTALL arch/x86/crypto/blowfish-x86_64.ko
INSTALL arch/x86/crypto/camellia-aesni-avx-x86_64.ko
INSTALL arch/x86/crypto/camellia-aesni-avx2.ko
INSTALL arch/x86/crypto/camellia-x86_64.ko
INSTALL arch/x86/crypto/cast5-avx-x86_64.ko
INSTALL arch/x86/crypto/cast6-avx-x86_64.ko
INSTALL arch/x86/crypto/chacha-x86_64.ko
INSTALL arch/x86/crypto/crc32-pclmul.ko
INSTALL arch/x86/crypto/crct10dif-pclmul.ko
INSTALL arch/x86/crypto/des3_edc-x86_64.ko
INSTALL arch/x86/crypto/ghash-clmulni-intel.ko
INSTALL arch/x86/crypto/glue_helper.ko
INSTALL arch/x86/crypto/nhpoly1305-avx2.ko
INSTALL arch/x86/crypto/nhpoly1305-sse2.ko
INSTALL arch/x86/crypto/poly1305-x86_64.ko
INSTALL arch/x86/crypto/serpent-avx-x86_64.ko
INSTALL arch/x86/crypto/serpent-avx2.ko
INSTALL arch/x86/crypto/serpent-sse2-x86_64.ko
INSTALL arch/x86/crypto/sha1-ssse3.ko
INSTALL arch/x86/crypto/sha256-ssse3.ko
INSTALL arch/x86/crypto/sha512-ssse3.ko
INSTALL arch/x86/crypto/twofish-avx-x86_64.ko
INSTALL arch/x86/crypto/twofish-x86_64-3way.ko
INSTALL arch/x86/crypto/twofish-x86_64.ko
INSTALL arch/x86/events/intel/intel-cstate.ko
INSTALL arch/x86/events/intel/intel-rapl-perf.ko
INSTALL arch/x86/kernel/cpu/mce/mce-inject.ko
INSTALL arch/x86/kernel/cpuid.ko
INSTALL arch/x86/kernel/msr.ko
INSTALL arch/x86/kvm/kvm-amd.ko

```

安装模块

```

test@ubuntu:~/linux-5.6.14$ sudo make install
sh ./arch/x86/boot/install.sh 5.6.14 arch/x86/boot/bzImage \
System.map "/boot"
run-parts: executing /etc/kernel/postinst.d/apt-auto-removal 5.6.14 /boot/vmlinuz-5.6.14
run-parts: executing /etc/kernel/postinst.d/initramfs-tools 5.6.14 /boot/vmlinuz-5.6.14
update-initramfs: Generating /boot/initrd.img-5.6.14
run-parts: executing /etc/kernel/postinst.d/unattended-upgrades 5.6.14 /boot/vmlinuz-5.6.14
run-parts: executing /etc/kernel/postinst.d/update-notifier 5.6.14 /boot/vmlinuz-5.6.14
run-parts: executing /etc/kernel/postinst.d/zz-update-grub 5.6.14 /boot/vmlinuz-5.6.14
Sourcing file `/etc/default/grub'
Sourcing file `/etc/default/grub.d/init-select.cfg'
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.6.14
Found initrd image: /boot/initrd.img-5.6.14
Found linux image: /boot/vmlinuz-5.6.14.old
Found initrd image: /boot/initrd.img-5.6.14
Found linux image: /boot/vmlinuz-5.3.0-53-generic
Found initrd image: /boot/initrd.img-5.3.0-53-generic
Found linux image: /boot/vmlinuz-5.3.0-18-generic
Found initrd image: /boot/initrd.img-5.3.0-18-generic
Found memtest86+ image: /boot/memtest86+.elf
Found memtest86+ image: /boot/memtest86+.bin
done
test@ubuntu:~/linux-5.6.14$

```

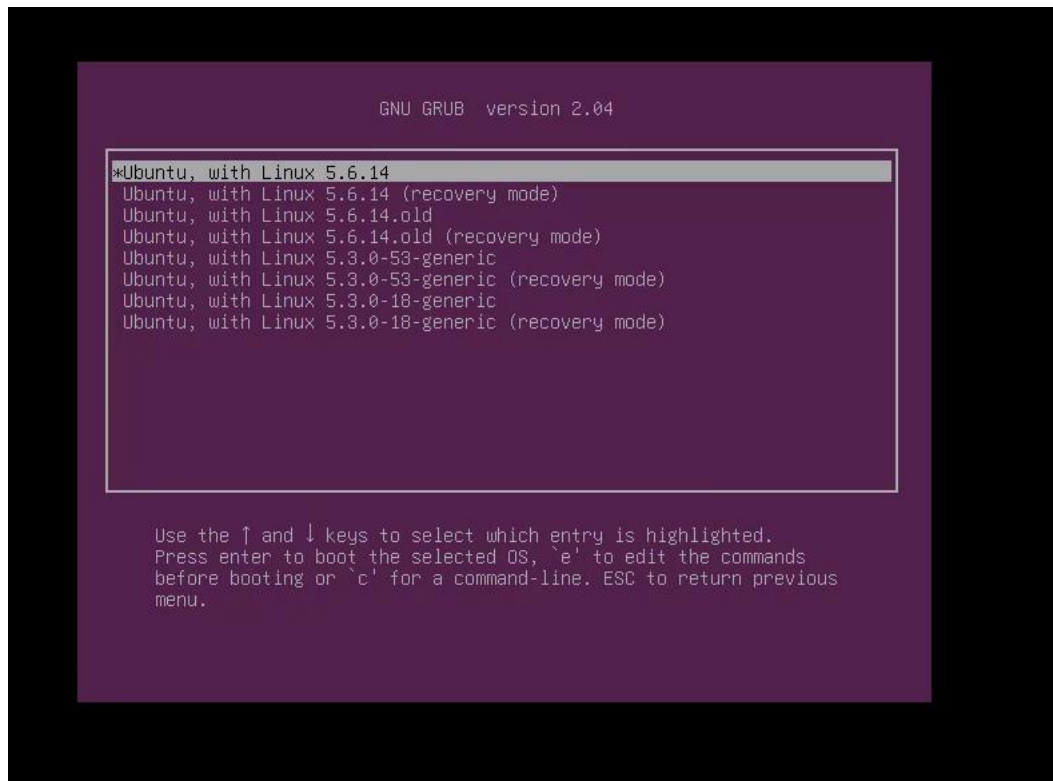
安装 kernel

```

test@ubuntu:~/linux-5.6.14$ sudo reboot

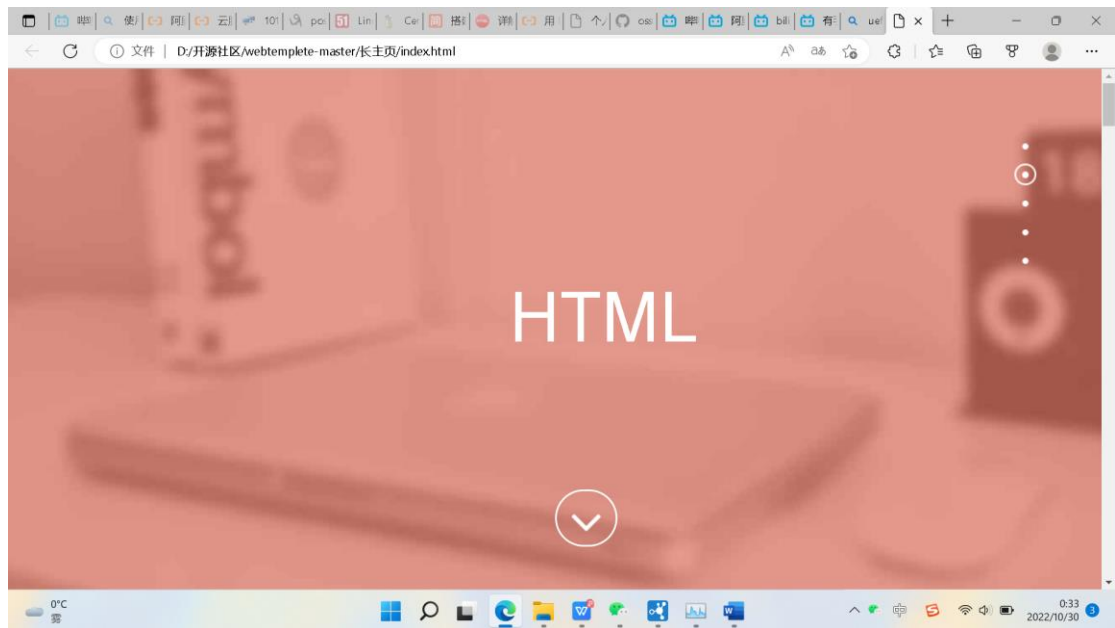
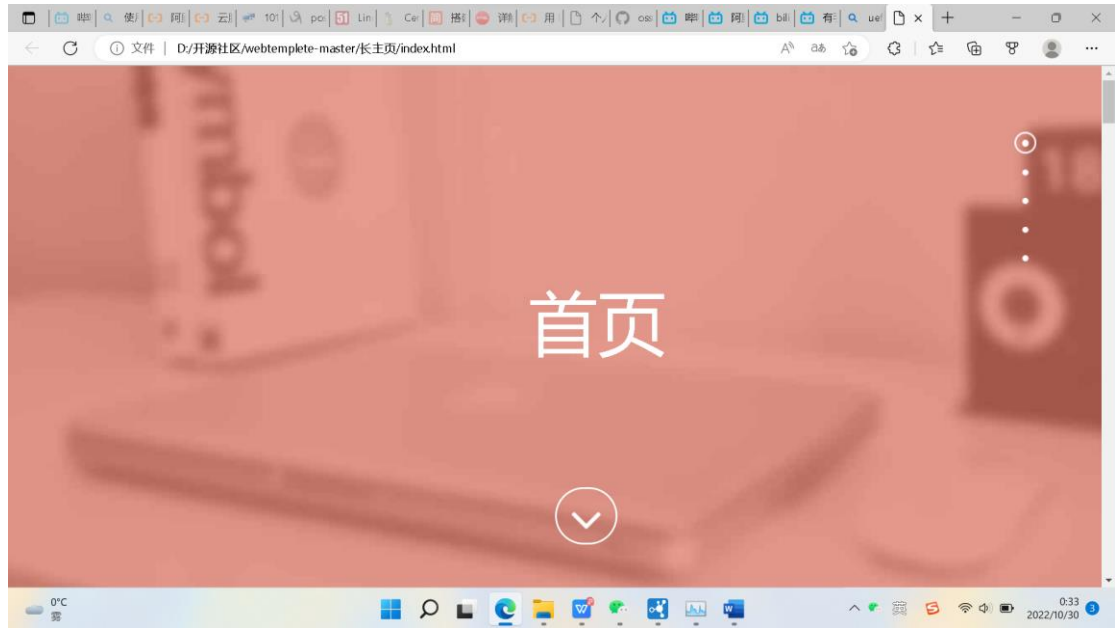
```

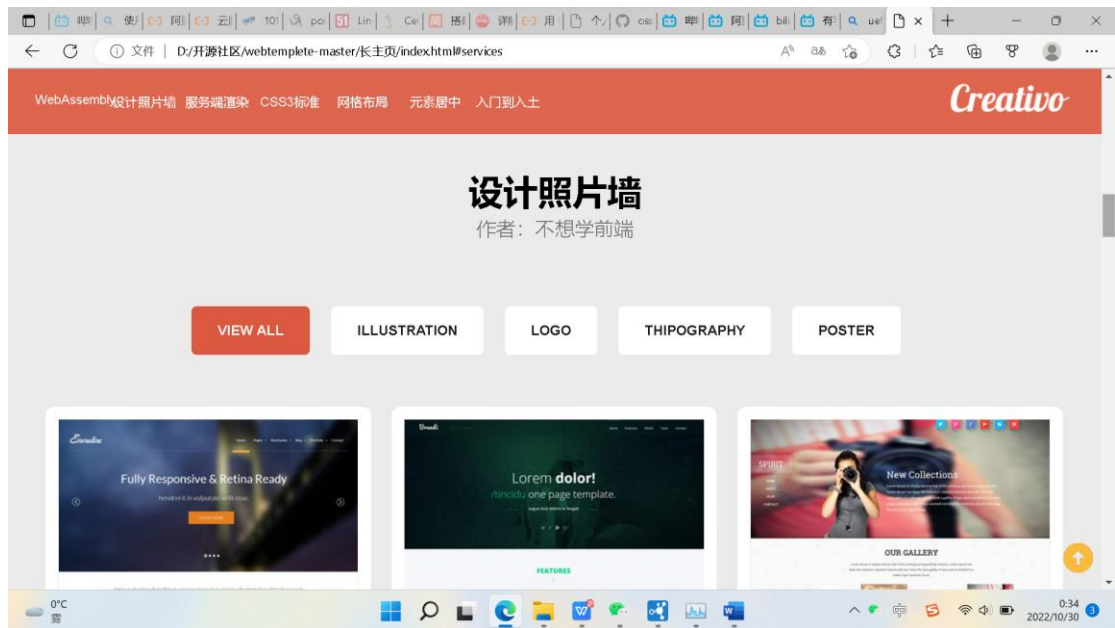
重启系统

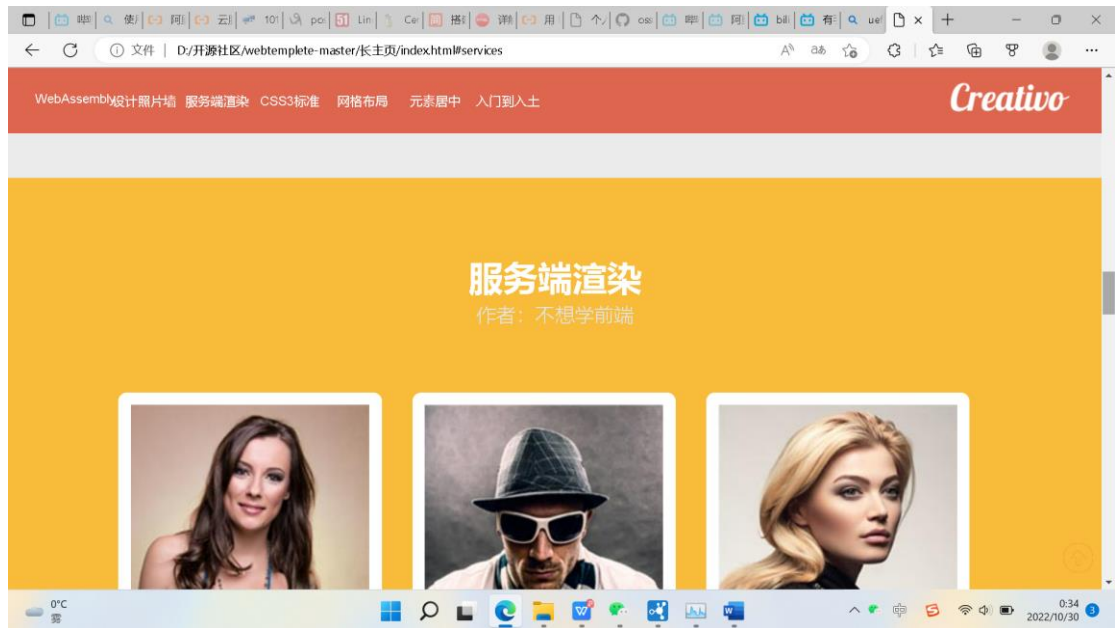


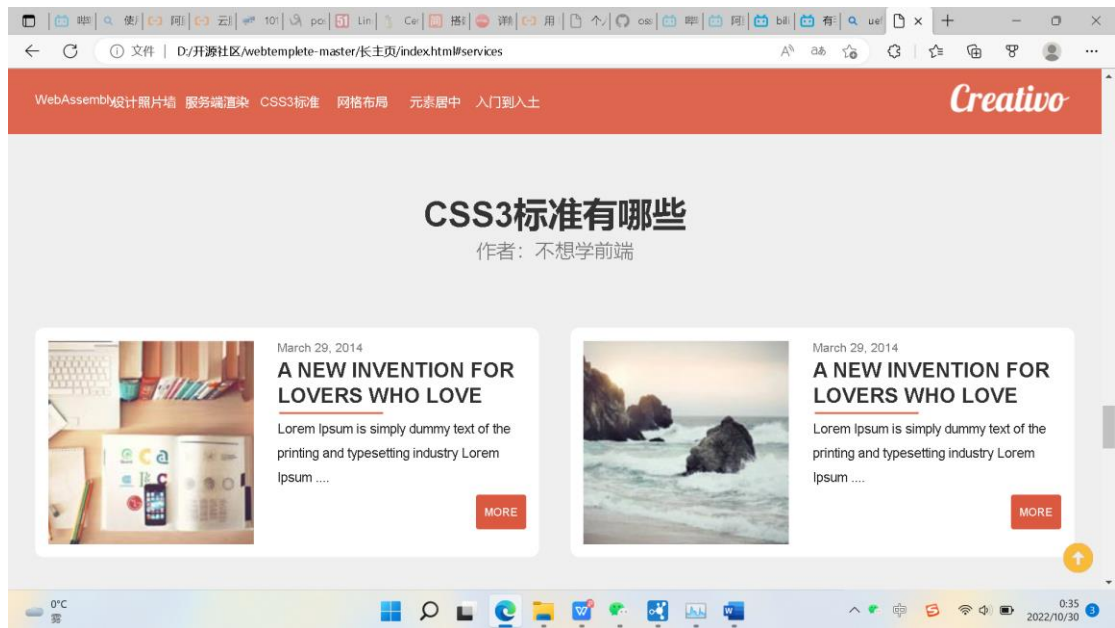
内核安装成功

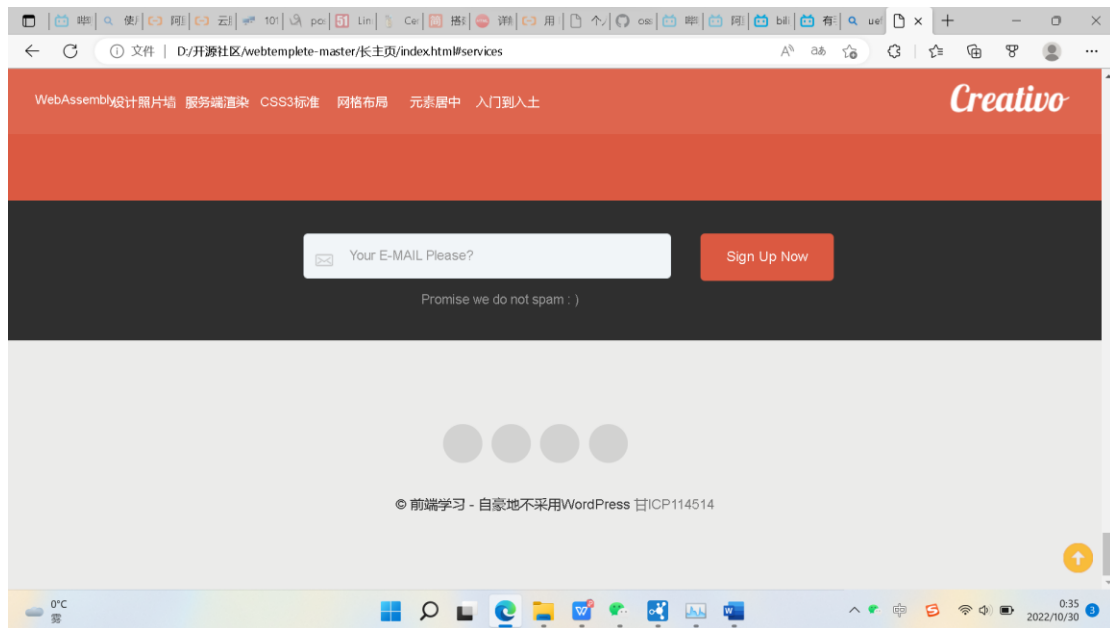
前端界面





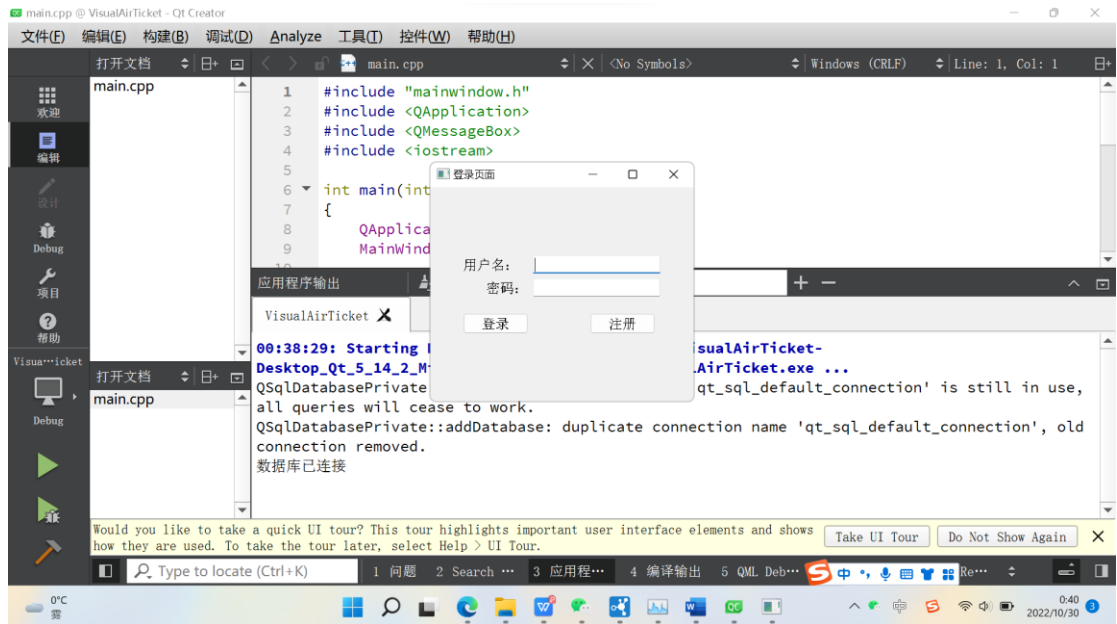
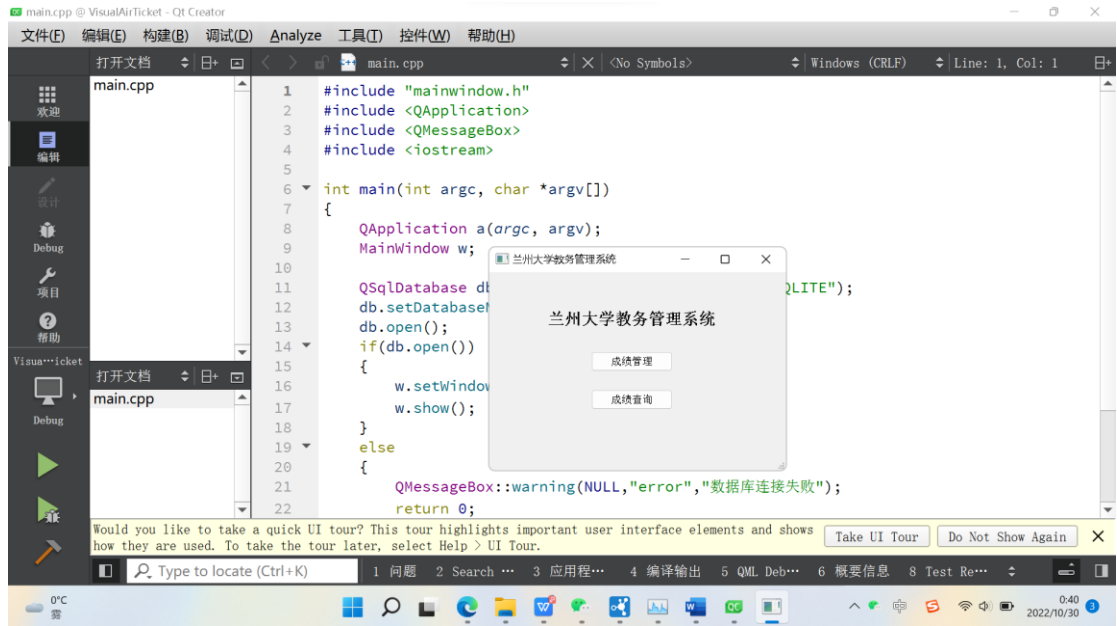


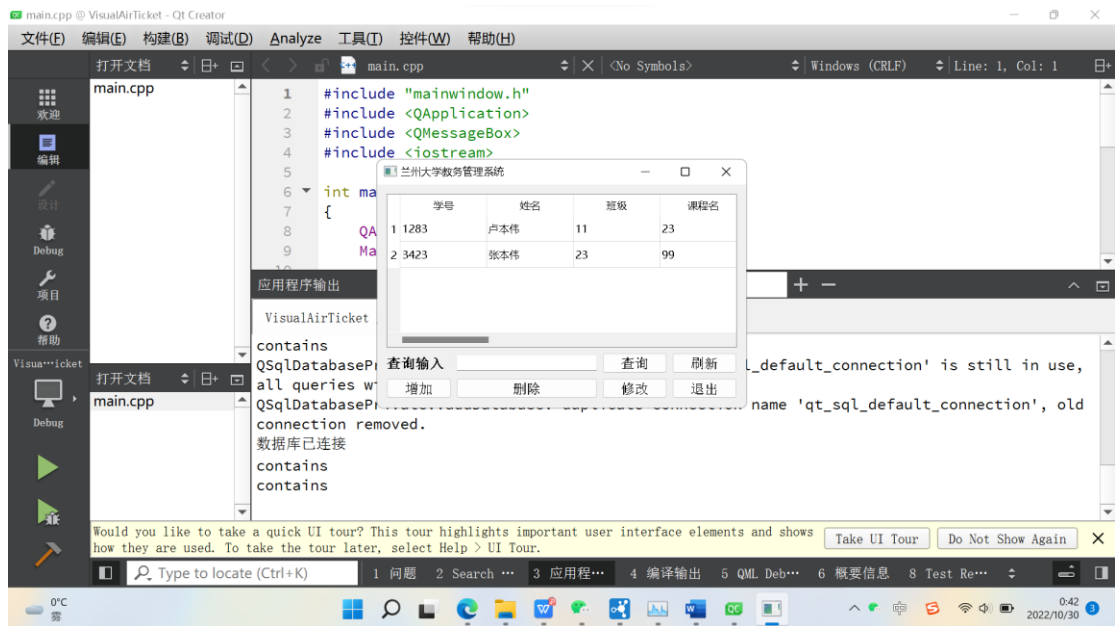
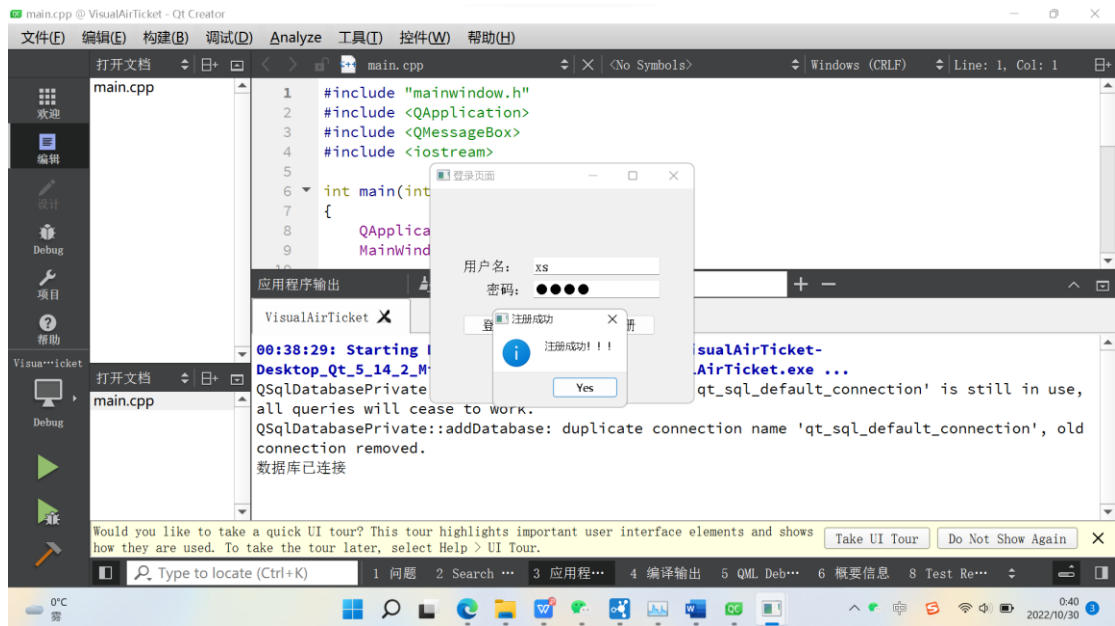


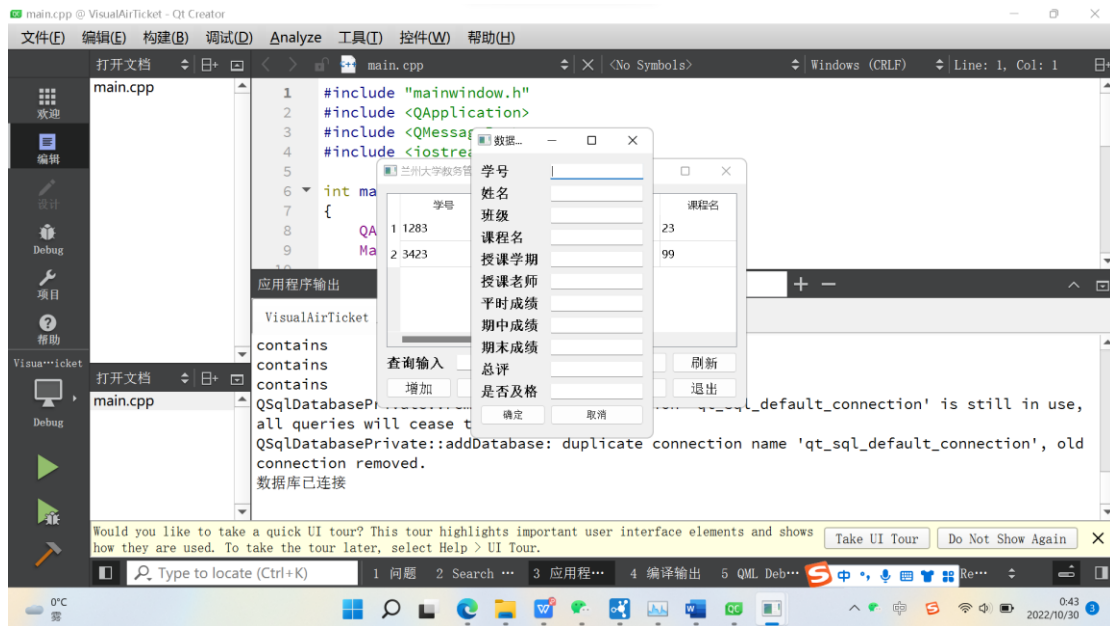


后端

用 c++ 写了一个登录管理软件，连接 sqlite 数据库，有登录，注册，增删改查功能







C 语言，输出路径下的文件

