1) This nsh shell is meant to work on xv6 OS only, however the x86 xv6 is deprecated. So I used the RISC-V one, which is a bit tedious to set up, but is nevertheless easy. This is where you find the RISC-V version: https://github.com/mit-pdos/xv6-riscv/

You can `git clone` it into any location.

2) First install the RISC-V GCC toolchain (from this link): https://github.com/stnolting/riscv-gcc-prebuilt/releases

2) Also install QEMU RISC-V emulator.

using command `sudo apt install qemu-system-riscv64`

```
        user/usys.S \
user/_cat user/_echo user/_forktest user/_grep user/_init user/_kill user/_ln user/_ls user/_mkdir user/_rm user/_sh user/_stressfs user/_usertests user/_grind user/_wc
[sandstorm@Victus16 xv6-riscv]$ sudo apt install qemu-system-riscv64
[sudo] password for sandstorm:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'qemu-system-misc' instead of 'qemu-system-riscv64'
The following packages were automatically installed and are no longer required:
  iputils-arping ncurses-term openssh-sftp-server ssh-import-id
Use 'sudo apt autoremove' to remove them.
Suggested packages:
  samba vde2
The following NEW packages will be installed:
  qemu-system-misc
0 upgraded, 1 newly installed, 0 to remove and 48 not upgraded.
Need to get 41.0 MB of archives.
After this operation, 185 MB of additional disk space will be used.
Ign:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 qemu-system-misc amd64 1:6.2+dfsg-2ubuntu6.6
Ign:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 qemu-system-misc amd64 1:6.2+dfsg-2ubuntu6.6
Ign:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 qemu-system-misc amd64 1:6.2+dfsg-2ubuntu6.6
Ign:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 qemu-system-misc amd64 1:6.2+dfsg-2ubuntu6.6
Get:1 http://security.ubuntu.com/ubuntu jammy-updates/main amd64 qemu-system-misc amd64 1:6.2+dfsg-2ubuntu6.6 [41.0 MB]
18% [1 qemu-system-misc 9,193 kB/41.0 MB 22%]
```

Now you have all the required pre-requisites.

3) Download the nsh.c file and the Makefile. Paste the nsh.c file into the “user” folder and the replace the Makefile in the parent folder with the one I sent you.

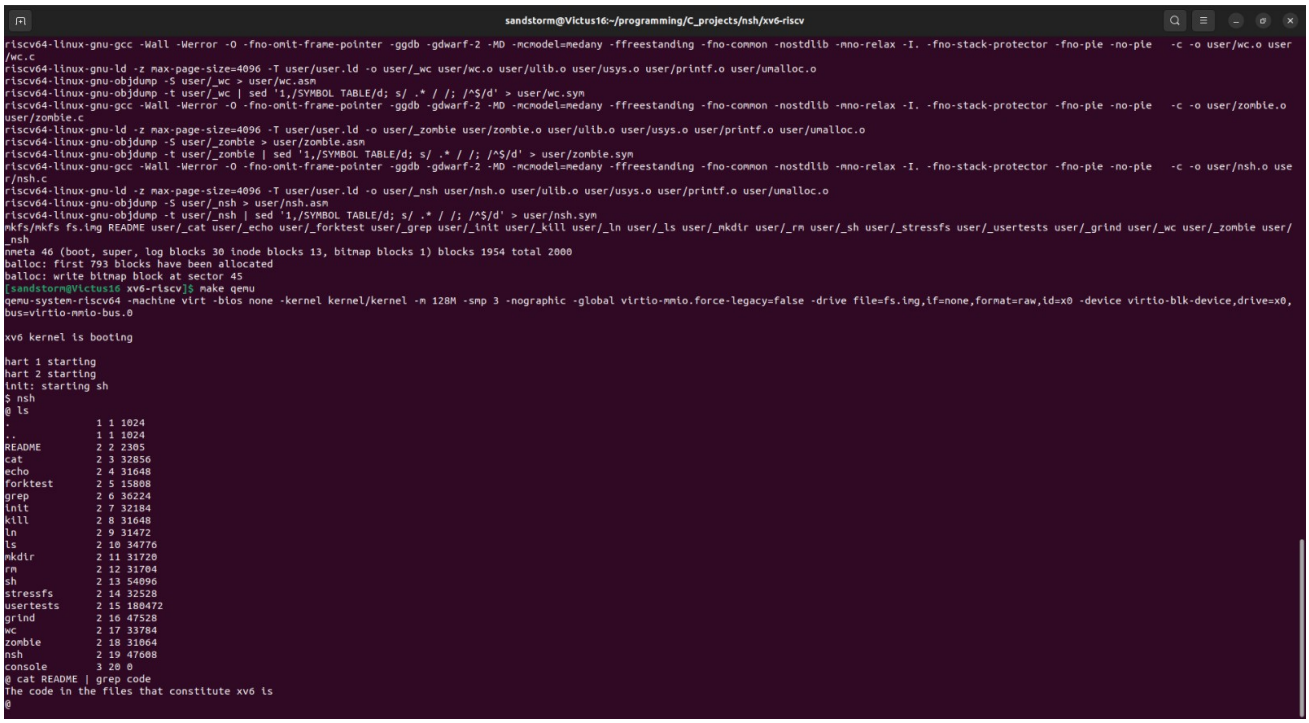
4) Go inside the folder and open the terminal in the location where Makefile is located.

5) Comment out the “$K/console.o” first and run make.

6) Run `make fs.img`

7) Run `make qemu`
8) Uncomment out the aforementioned line and rerun the three commands.
9) After that you should be running the QEMU emulator, running the version of RISC-V version of xv6.

(The output should be something similar to)



You can see the shell works just fine :)

If you’re wondering