



```
ashhal@DESKTOP-ULR67QV: ~/xv6-labs-2025
-ffreestanding -fno-common -nostdlib -fno-builtin
-fno-builtin-memmove -fno-builtin-memcmp -fno-buil
builtin-malloc -fno-builtin-putc -fno-builtin-free
f -fno-builtin-vprintf -I. -fno-stack-protector -f
riscv64-linux-gnu-ld -z max-page-size=4096 -T user
printf.o user/umalloc.o
riscv64-linux-gnu-objdump -S user/_memdump > user/
riscv64-linux-gnu-objdump -t user/_memdump | sed '
mkfs/mkfs fs.img README user/findtest.sh user/sixf
/_kill user/_ln user/_ls user/_mkdir user/_rm user
user/_logstress user/_forphan user/_dorphan user/_nmeta
47 (boot, super, log blocks 31, inode blocks
balloc: first 1111 blocks have been allocated
balloc: write bitmap block at sector 46
qemu-system-riscv64 -machine virt -bios none -kern
egacy=false -drive file=fs.img,if=none,format=raw,
xv6 kernel is booting

hart 2 starting
hart 1 starting
init: starting sh
uptime
870 ticks since boot
```

```
ashhal@DESKTOP-ULR67QV: ~/xv6-labs-2025
ashhal@DESKTOP-ULR67QV:~/xv6-labs-2025$ make qemu
mv -f fs.img fs.img.bk
mkfs/mkfs fs.img README user/findtest.sh user/sixfive.t
/_kill user/_ln user/_ls user/_mkdir user/_rm user/_sh
user/_logstress user/_forphan user/_dorphan user/_sleep
nmeta 47 (boot, super, log blocks 31, inode blocks 13,
alloc: first 1111 blocks have been allocated
alloc: write bitmap block at sector 46
qemu-system-riscv64 -machine virt -bios none -kernel ke
egacy=false -drive file=fs.img,if=none,format=raw,id=x0

xv6 kernel is booting

hart 2 starting
hart 1 starting
init: starting sh
find . a.
./cat
./forphan
./dorphan
find . a
./cat
./forphan
./dorphan
```

Wait, history, complete,n0 \$

```
ashhal@DESKTOP-ULR67QV: ~/xv6-labs-2025

hart 1 starting
hart 2 starting
init: starting sh
sleep 10
sleep 100
wait
echo done
done
echo first
first
echo second
second
history
1: sleep 10

2: sleep 100

3: wait

4: echo done

5: echo first

6: echo second

complete ec
Completions for 'ec':
    echo
```

Find_grep

```
[ashhal@DESKTOP-ULR67QV: ~/xv6-labs-2025]
```

```
sleep 100
wait
echo done
done
echo first
first
echo second
second
history
1: sleep 10

2: sleep 100

3: wait

4: echo done

5: echo first

6: echo second

complete ec
Completions for 'ec':
  echo
find . ^f
./findtest.sh
./forktest
./forphan
./find
```