

Міністерство освіти і науки України  
Національний технічний університет України  
“Київський політехнічний інститут ім. Ігоря Сікорського”  
Факультет інформатики та обчислювальної техніки  
Кафедра обчислювальної техніки

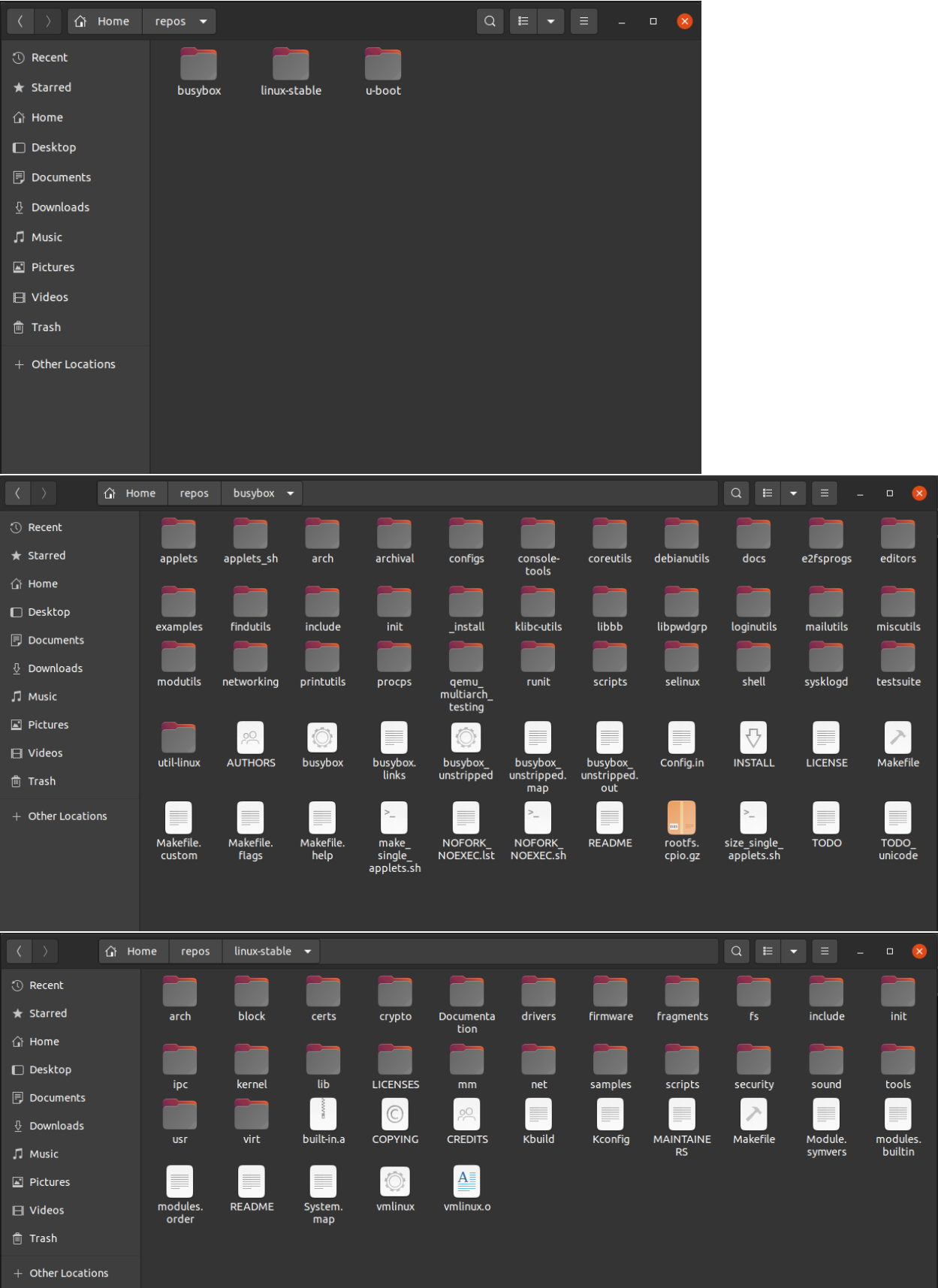
## ЛАБОРАТОРНА РОБОТА №4

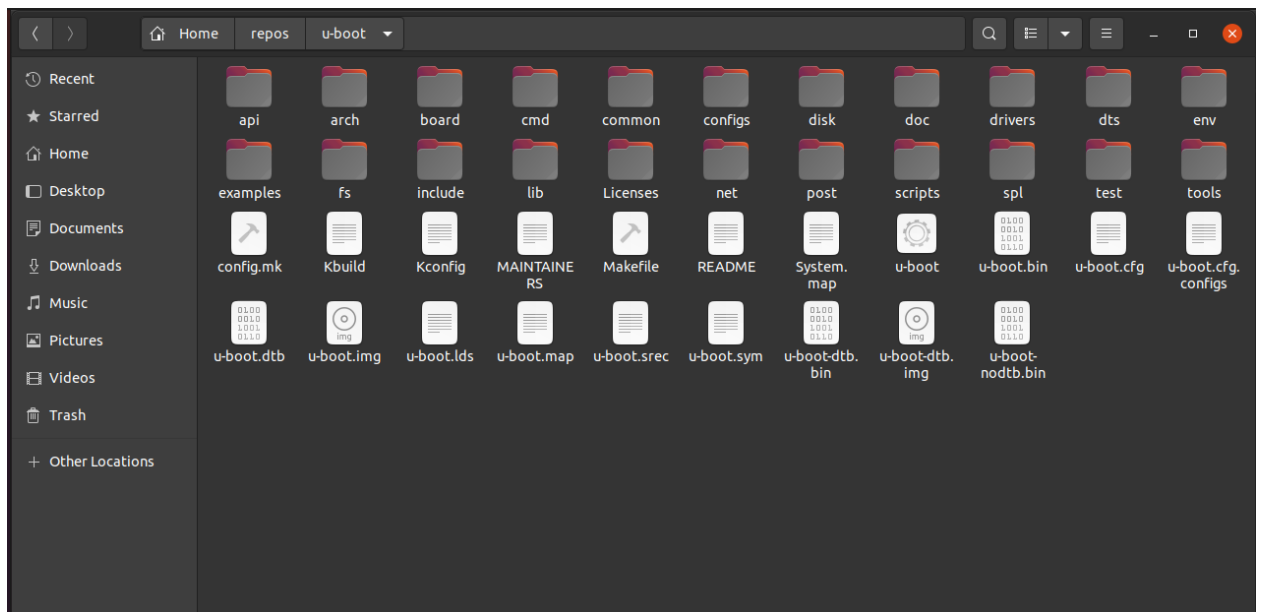
З дисципліни “Архітектура комп’ютерів 2”

Виконав:  
студент 3 курсу ФІОТ  
групи ІВ-91  
Дерачиц В.В.

Київ 2022

Файлова структура:





Перевірка правильності виконання:

```

Activities  Terminal  cт 5 19:36
Telegram  HW#4 – Google Диск  +
vide@vide-VirtualBox: ~/repos/busybox

[ 3.201002] NET: Registered protocol family 29
[ 3.201516] can: raw protocol (rev 20170425)
[ 3.201923] can: broadcast manager protocol (rev 20170425 t)
[ 3.202835] can: netlink gateway (rev 20170425) max_hops=1
[ 3.205205] Key type dns_resolver registered
[ 3.206055] ThumbEE CPU extension supported.
[ 3.206697] Registering SWP/SWPB emulation handler
[ 3.211157] Loading compiled-in X.509 certificates
[ 3.224984] input: gpio-keys as /devices/platform/gpio-keys/input/input0
[ 3.231795] rtc-pl031 9010000.pl031: setting system clock to 2022-01-05 17:36:06 UTC (1641404166)
[ 3.241932] uart-pl011 9000000.pl011: no DMA platform data
[ 3.531784] Freeing unused kernel memory: 2048K
[ 3.541406] Run /init as init process

Please press Enter to activate this console.
/ # uname -a
Linux (none) 4.19.224 #1 SMP Wed Jan 5 18:36:40 EET 2022 armv7l GNU/Linux
/ # ls -l
total 0
drwxrwxr-x 2 1000 1000 0 Jan 5 17:17 bin
drwxrwxr-x 2 1000 1000 0 Jan 5 17:28 boot
drwxrwxr-x 3 1000 1000 0 Jan 5 17:36 dev
drwxrwxr-x 3 1000 1000 0 Jan 5 17:32 etc
lrwxrwxrwx 1 1000 1000 11 Jan 5 17:27 init -> bin/busybox
drwxrwxr-x 3 1000 1000 0 Jan 5 17:30 lib
lrwxrwxrwx 1 1000 1000 11 Jan 5 17:17 linuxrc -> bin/busybox
dr-xr-xr-x 90 root root 0 Jan 1 1970 proc
drwxrwxr-x 2 1000 1000 0 Jan 5 17:18 root
drwxrwxr-x 2 1000 1000 0 Jan 5 17:17/sbin
dr-xr-xr-x 12 root root 0 Jan 5 17:36 sys
drwxrwxr-x 2 1000 1000 0 Jan 5 17:18 tmp
drwxrwxr-x 4 1000 1000 0 Jan 5 17:17/usr
/ #

```

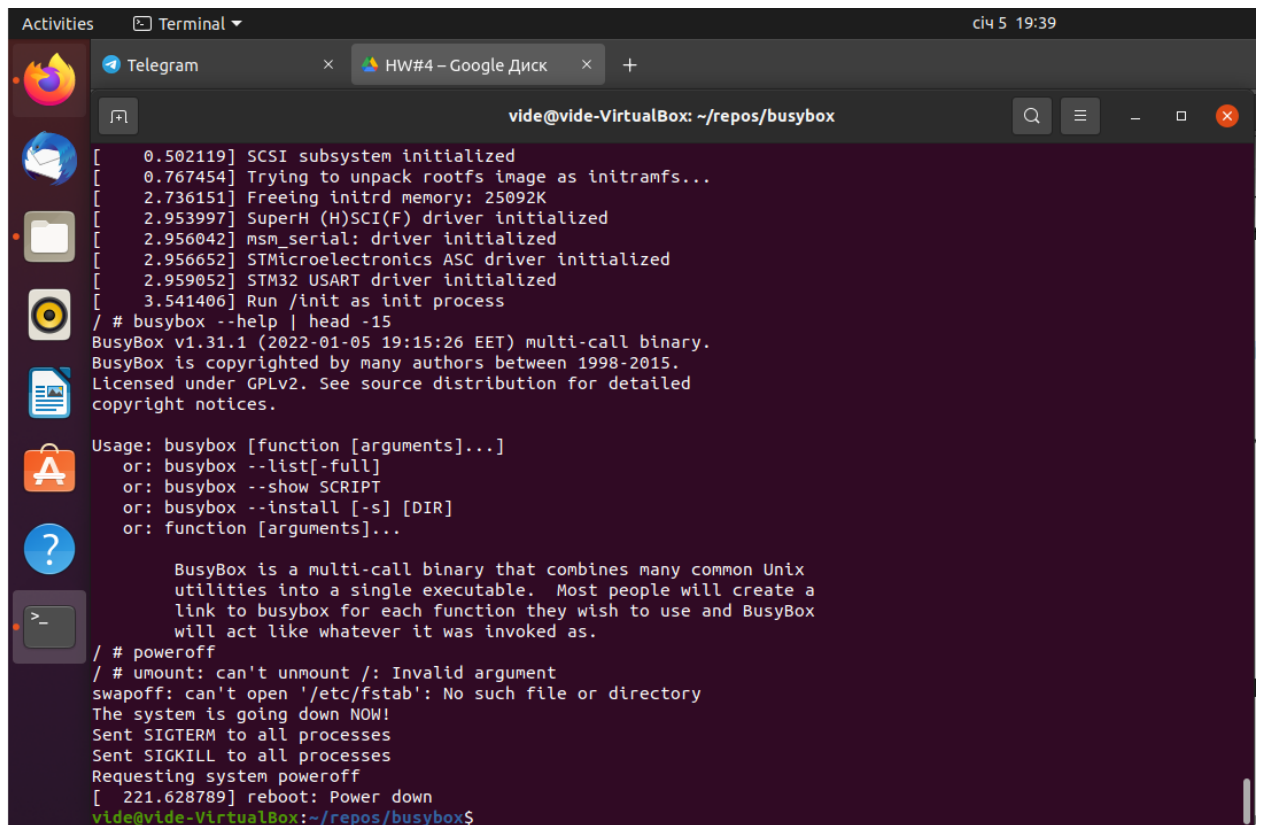
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dr-xr-xr-x 12 root root 0 Jan 5 17:36 sys
drwxrwxr-x 2 1000 1000 0 Jan 5 17:18 tmp
drwxrwxr-x 4 1000 1000 0 Jan 5 17:17 usr
/ # dmesg | grep init
[ 0.000000] random: get_random_bytes called from start_kernel+0x9c/0x480 with crng_init=0
[ 0.000000] Memory: 406428K/524288K available (12288K kernel code, 1619K rwdm, 4784K rodata, 2048K init, 3
93K bss, 52324K reserved, 65536K cma-reserved, 0K highmem)
[ 0.000000] .init : 0x(ptrval) - 0x(ptrval) (2048 kB)
[ 0.121090] devtmpfs: initialized
[ 0.184044] pinctrl core: initialized pinctrl subsystem
[ 0.502119] SCSI subsystem initialized
[ 0.767454] Trying to unpack rootfs image as initramfs...
[ 2.736151] Freeing initrd memory: 25092K
[ 2.953997] SuperH (H)SCI(F) driver initialized
[ 2.956042] msm_serial: driver initialized
[ 2.956652] STMicroelectronics ASC driver initialized
[ 2.959052] STM32 USART driver initialized
[ 3.541406] Run /init as init process
/ #
```

```
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/ # busybox --help | head -15
BusyBox v1.31.1 (2022-01-05 19:15:26 EET) multi-call binary.
BusyBox is copyrighted by many authors between 1998-2015.
Licensed under GPLv2. See source distribution for detailed
copyright notices.

Usage: busybox [function [arguments]...]
or: busybox --list[-full]
or: busybox --show SCRIPT
or: busybox --install [-s] [DIR]
or: function [arguments]...

BusyBox is a multi-call binary that combines many common Unix
utilities into a single executable. Most people will create a
link to busybox for each function they wish to use and BusyBox
will act like whatever it was invoked as.

/ #
```



```
Activities  Terminal  ci4 5 19:39
Telegram  HW#4 – Google Диск  +
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[ 0.502119] SCSI subsystem initialized
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    utilities into a single executable. Most people will create a
    link to busybox for each function they wish to use and BusyBox
    will act like whatever it was invoked as.

/ # poweroff
/ # umount: can't unmount /: Invalid argument
swapoff: can't open '/etc/fstab': No such file or directory
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system poweroff
[ 221.628789] reboot: Power down
vide@vide-VirtualBox:~/repos/busybox$
```

**Висновок:** лабораторна робота була виконана правильно, про що свідчать наведені вище скриншоти.