

# Initd

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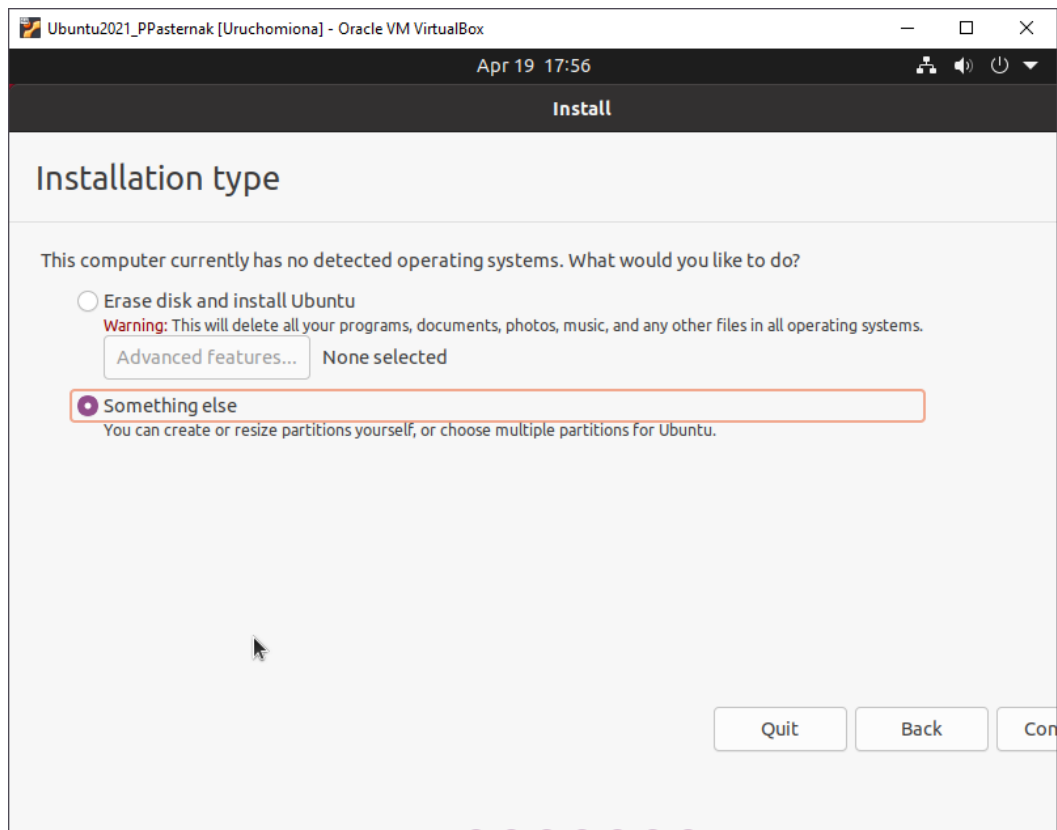
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## 1. Zainstaluj Linuxa (Ubuntu) tak by spełnione zostały warunki:

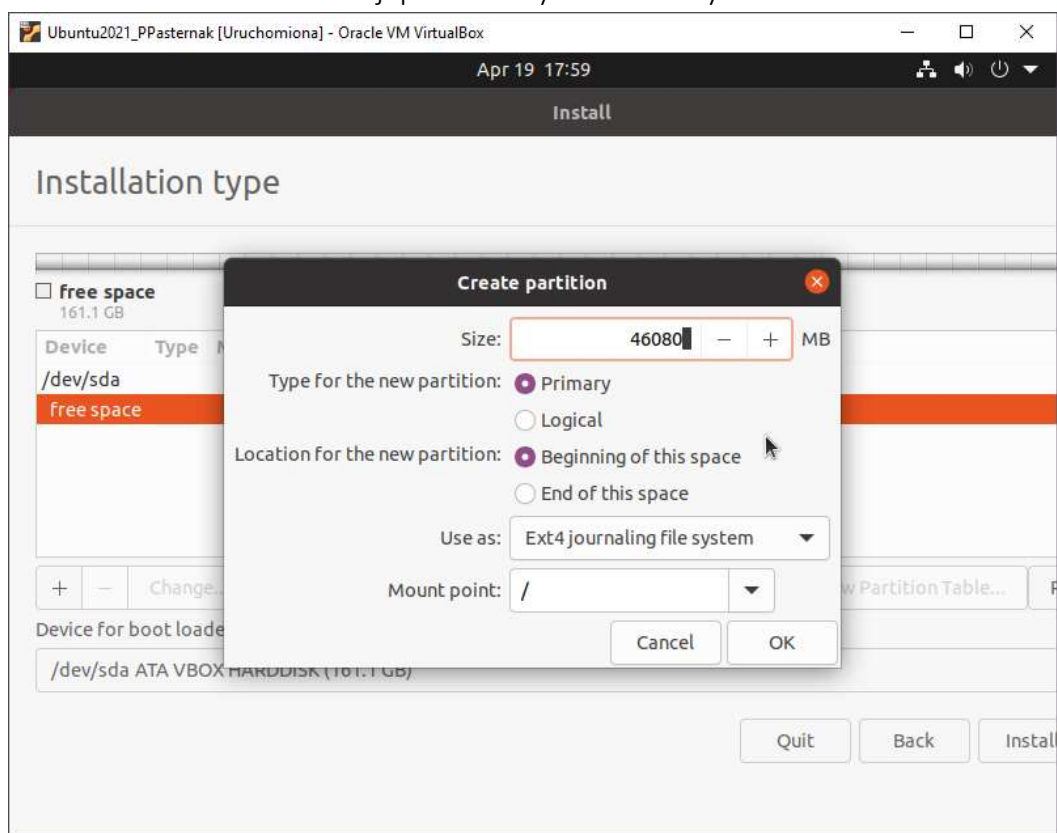
- Dysk ma mieć 150 GB

The image displays four sequential screenshots of the 'Tworzenie nowego dysku' (Create New Disk) wizard in a virtualization software, likely Oracle VM VirtualBox.

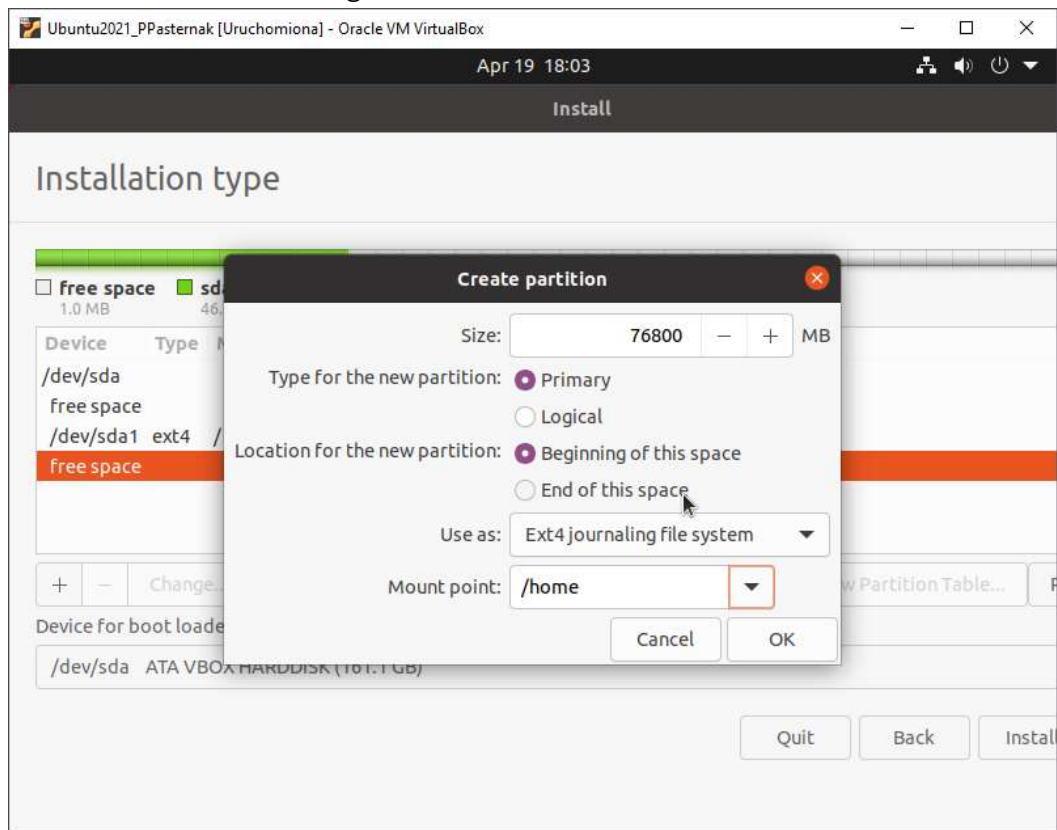
- Top Left Screenshot: 'Dysk twarde' (Hard Disk).** This screen explains the purpose of the disk and offers three options: 'Nie dodawaj wirtualnego dysku twardego' (Do not add a virtual hard disk), 'Stwórz wirtualny dysk twardego' (Create a virtual hard disk) - which is selected, and 'Użyj istniejącego pliku wirtualnego dysku twardego' (Use an existing virtual hard disk file). A dropdown menu shows 'backup.vdi (Normalny, 50,00 GB)'. Buttons at the bottom are 'Utwórz' (Create) and 'Anuluj' (Cancel).
- Top Right Screenshot: 'Typ pliku z wirtualnym dyskiem' (File type with virtual disk).** This screen asks for the file type. Three options are listed: 'VDI (VirtualBox Disk Image)' - selected, 'VHD (Virtual Hard Disk)', and 'VMDK (Virtual Machine Disk)'. Buttons at the bottom are 'Tryb eksperta' (Expert mode), 'Dalej' (Next), and 'Anuluj' (Cancel).
- Bottom Left Screenshot: 'Pamięć na fizycznym dysku twarde' (Memory on physical hard disk).** This screen asks whether the disk should grow with the VM ('Dynamicznie przydzielany' - selected) or have a fixed size ('Stały rozmiar'). A note mentions that dynamic disks use space on the physical disk. Buttons at the bottom are 'Dalej' (Next) and 'Anuluj' (Cancel).
- Bottom Right Screenshot: 'Lokalizacja pliku i rozmiar' (File location and size).** This screen prompts for the file name and location. The path 'D:\VB\_Maszyny\Linux\Ubuntu\Ubuntu2021\Ubuntu2021.vdi' is entered. Below, a slider for disk size is shown, ranging from 4,00 MB to 2,00 TB, with '150,00 GB' selected and highlighted in a pink box. Buttons at the bottom are 'Utwórz' (Create) and 'Anuluj' (Cancel).



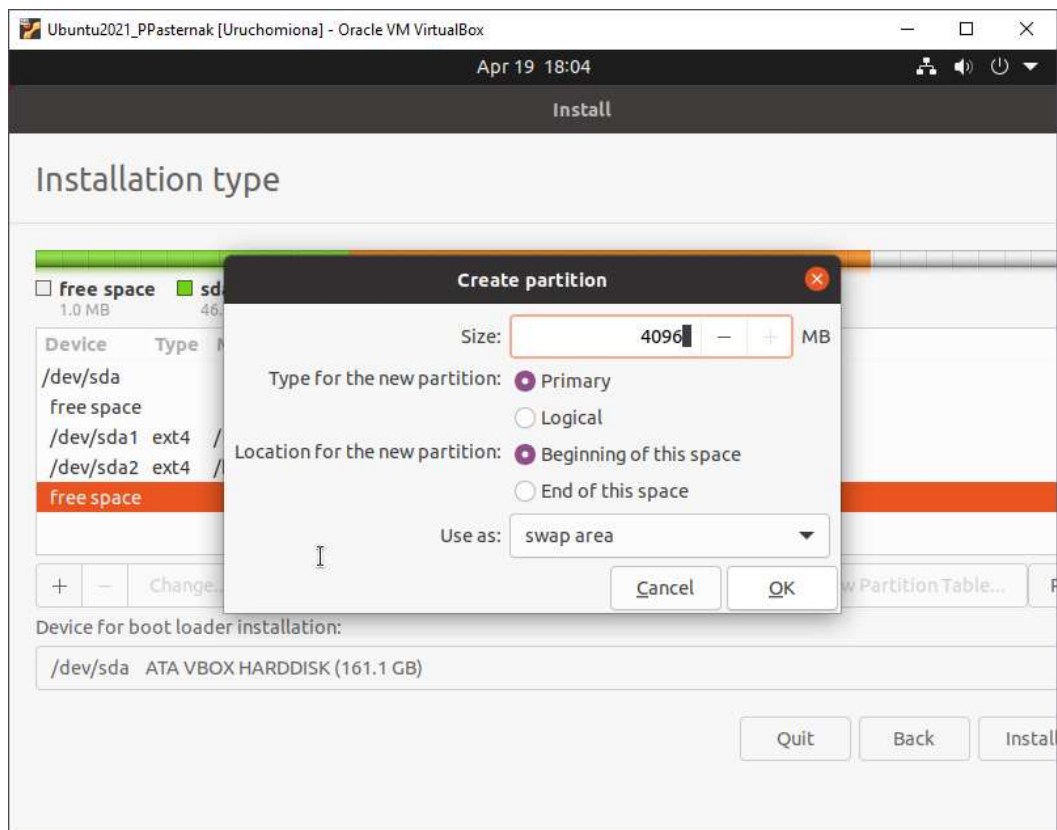
- Podczas instalacji przeznaczyć 30 % na system

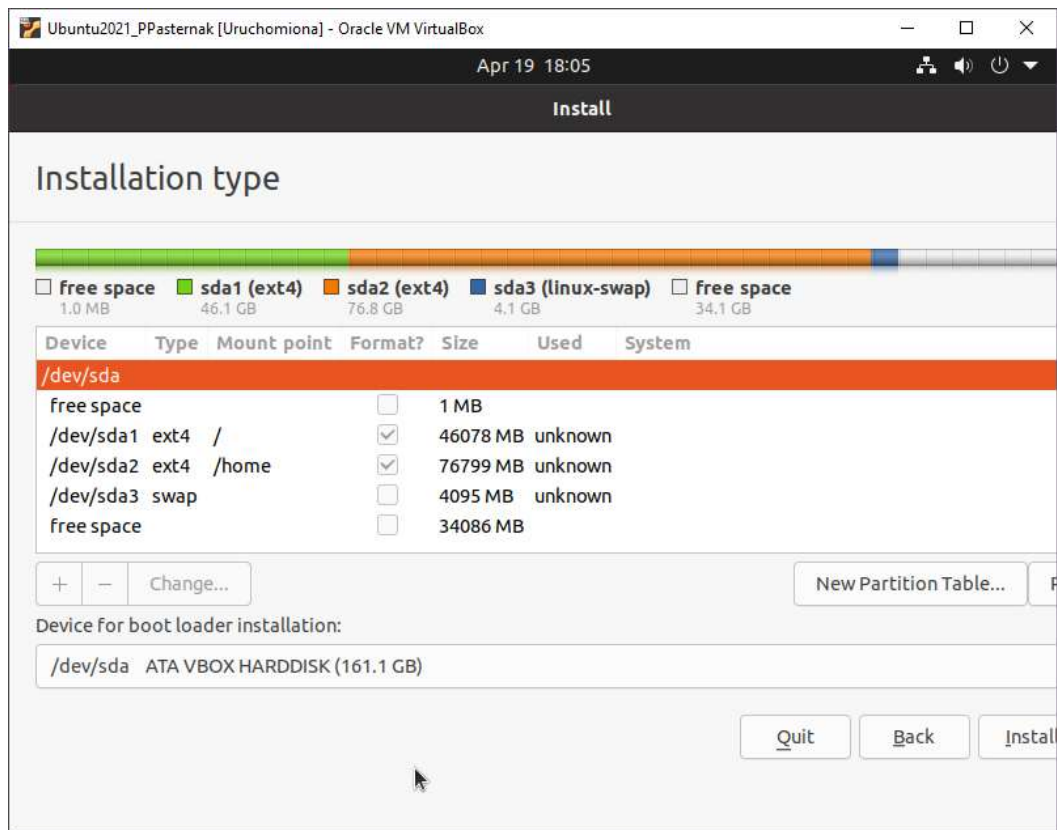


- 50% na katalog HOME

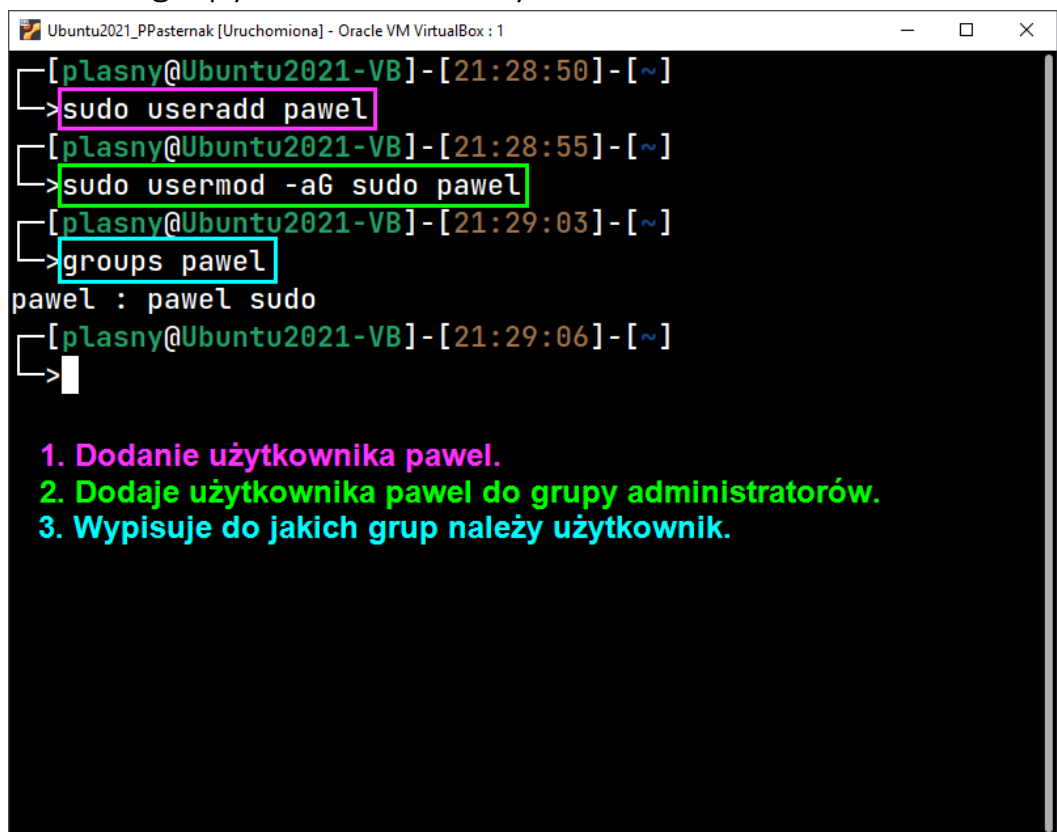


- 4 GB na SWAP

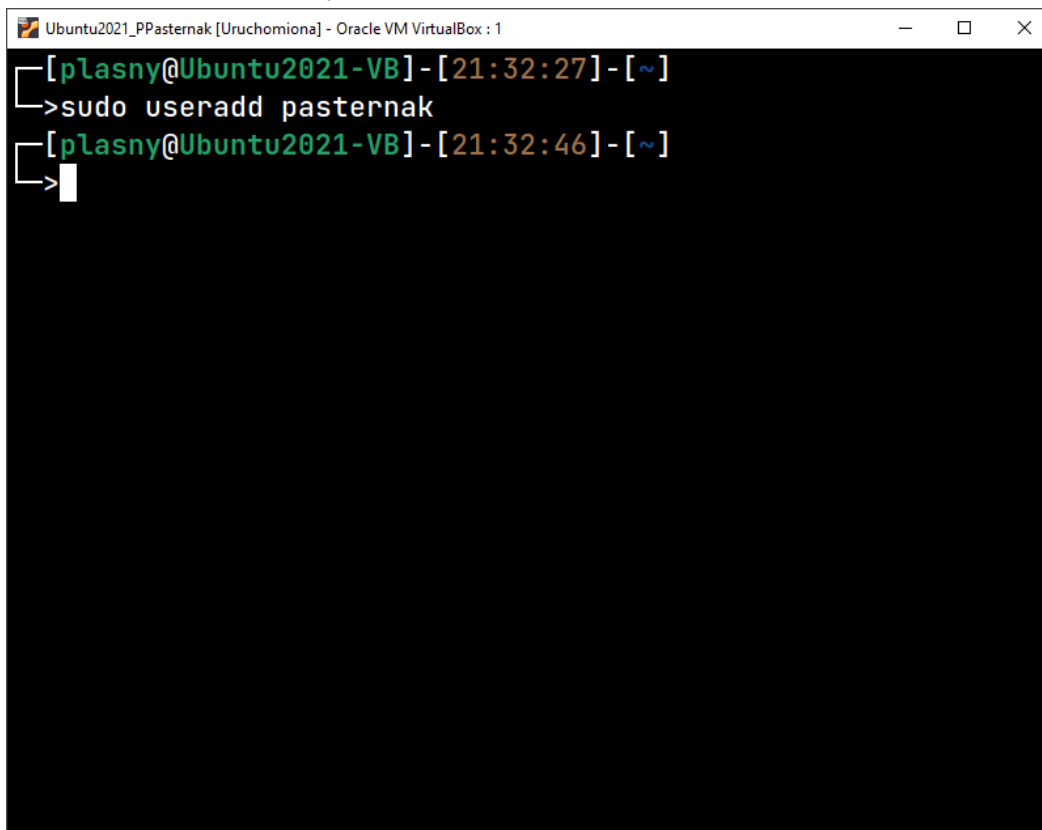




2. Utwórz użytkownika (Twoje Imię) np. Tomek ma należeć do grupy Administratorzy

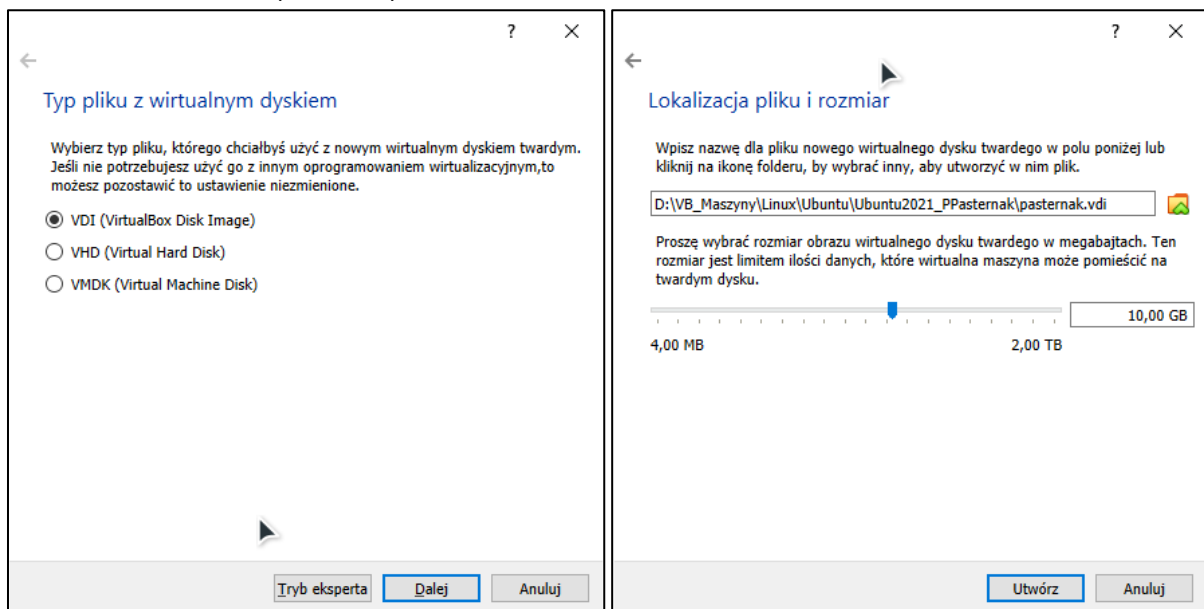


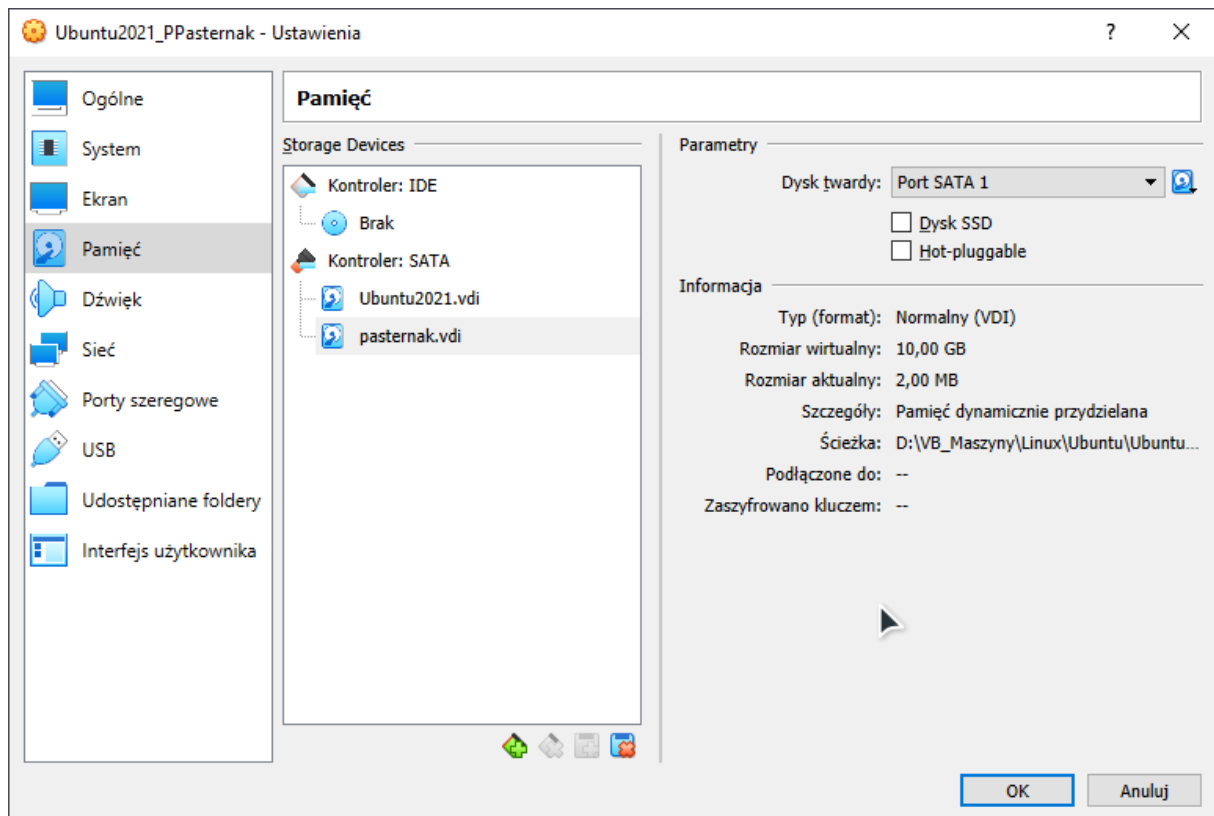
### 3. Utwórz użytkownika Nazwisko



```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasn@Ubuntu2021-VB] - [21:32:27] - [~]
>sudo useradd pasternak
[plasn@Ubuntu2021-VB] - [21:32:46] - [~]
>
```

- Dodać fizycznie dysk 10 GB – nazwa Nazwisko





- Podzielić dysk na 2 równe części

```

[plasn@Ubuntu2021-VB] - [21:42:18] - [~]
> lsblk -p
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
/dev/loop0   7:0      0    55,3M  1 loop /snap/core18/1885
/dev/loop1   7:1      0    62,1M  1 loop /snap/gtk-common-theme
/dev/loop2   7:2      0    50,7M  1 loop /snap/snap-store/481
/dev/loop3   7:3      0   217,9M  1 loop /snap/gnome-3-34-1804/
/dev/loop4   7:4      0    30,9M  1 loop /snap/snapd/9721
/dev/sda     8:0      0   150G   0 disk
├─/dev/sda1   8:1      0    487M   0 part /boot
├─/dev/sda2   8:2      0    42,9G   0 part /
├─/dev/sda3   8:3      0    71,5G   0 part /home
└─/dev/sda4   8:4      0     3,8G   0 part [SWAP]
/dev/sdb     8:16     0    10G   0 disk
/dev/sr0     11:0     1   1024M   0 rom

[plasn@Ubuntu2021-VB] - [21:42:19] - [~]
> sudo fdisk /dev/sdb

```

1. wypisanie wszystkich dostępnych urządzeń pamięci wraz z ich ścieżką.

2. Otwarcie narzędzia do partycjonowania (fdisk) na dysku sdb.



```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Welcome to fdisk (util-linux 2.36).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0x783ef1fc.

Command (m for help): n 1. Utworzenie nowej partycji.
Partition type
   p   primary (0 primary, 10 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p 2. Wybranie rodzaju partycji.
Partition number (1-4, default 1): 3. Wybranie numeru partycji.
First sector (2048-20971519, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-20971519, default 20971519): +5G
4. Wybranie pierwszego i ostatniego sektora partycji (rozmiaru partycji).
Created a new partition 1 of type 'Linux' and of size 5 GiB.
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-20971519, default 20971519): +5G

Created a new partition 1 of type 'Linux' and of size 5 GiB.
-> Powtarzamy to dla drugiej partycji.

Command (m for help): n
Partition type
   p   primary (1 primary, 0 extended, 3 free)
   e   extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (2-4, default 2):
First sector (10487808-20971519, default 10487808):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (10487808-20971519, default 20971519):

Created a new partition 2 of type 'Linux' and of size 5 GiB.

Command (m for help):
```

```

g  create a new empty GPT partition table
G  create a new empty SGI (IRIX) partition table
o  create a new empty DOS partition table
s  create a new empty Sun partition table

1. "p" wypisuje wszystkie utworzone na dysku partycje.
Command (m for help): p
Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xc243a338

Device      Boot      Start        End    Sectors  Size Id Type
/dev/sdb1                2048 10487807 10485760    5G 83 Linux
/dev/sdb2           10487808 20971519 10483712    5G 83 Linux

2. "w" zapisuje zmiany i wychodzi.
Command (m for help): w

```

- o 1 część podpiąć do katalogu Nazwisko – utworzonym w katalogu domowym

```

[plasnny@Ubuntu2021-VB] - [22:09:55] - [~]
-> sudo mkfs.ext4 /dev/sdb1 Formatowanie 1 partycji jako ext4, z pomocą polecenia mkfs.
mke2fs 1.45.6 (20-Mar-2020)
/dev/sdb1 contains a ext3 file system
created on Mon Apr 19 22:09:48 2021
Proceed anyway? (y,N) y
Creating filesystem with 1310720 4k blocks and 327680 inodes
Filesystem UUID: bc4ec2dc-d93f-48b2-bd1b-e055ef9a23fc
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information:
done

[plasnny@Ubuntu2021-VB] - [22:10:00] - [~]
->

```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasny@Ubuntu2021-VB] - [22:11:54] - [~]
> mkdir pasternak
[plasny@Ubuntu2021-VB] - [22:11:58] - [~]
> sudo mount /dev/sdb1 pasternak/
[plasny@Ubuntu2021-VB] - [22:12:11] - [~]
>
```

**1. Utworzenie folderu pasternak w katalogu domowym.**  
**2. Zamontowanie 1 partycji dysku sdb w katalogu pasternak.**

- 2 część sformatować w NTFS nadać etykietę dysku Tratatata

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasny@Ubuntu2021-VB] - [22:15:06] - [~]
> sudo mkfs.ntfs -L Tratatata /dev/sdb2
Cluster size has been automatically set to 4096 bytes.
Initializing device with zeroes: 100% - Done.
Creating NTFS volume structures.
mkntfs completed successfully. Have a nice day.
[plasny@Ubuntu2021-VB] - [22:16:40] - [~]
>
```

**Formatowanie 2 partycji jako NTFS.**  
**Flaga "-L" pozwala nadać etykietę partycji.**

## 4. Wypisz ile plików w systemie ma 5 znaków w nazwie

```

[plasn@Ubuntu2021-VB] - [22:26:32] - [~]
>sudo find / -name '?????'
/boot/grub/fonts
/tmp/.X11-unix/X1024
/tmp/.X11-unix/X1025
/sys/kernel/notes
/sys/kernel/tracing/hwlat_detector/width
/sys/kernel/tracing/per_cpu/cpu3/stats
/sys/kernel/tracing/per_cpu/cpu3/trace
/sys/kernel/tracing/per_cpu/cpu2/stats
/sys/kernel/tracing/per_cpu/cpu2/trace
/sys/kernel/tracing/per_cpu/cpu1/stats
/sys/kernel/tracing/per_cpu/cpu1/trace
/sys/kernel/tracing/per_cpu/cpu0/stats
/sys/kernel/tracing/per_cpu/cpu0/trace
/sys/kernel/tracing/options/block
/sys/kernel/tracing/trace
/sys/kernel/tracing/events/qdisc

```

Polecenie find szuka w całym komputerze, we wszystkich folderach (nawet dostępnych tylko dla administratorów) pliku o nazwie składającej się z 5 znaków.

```

[plasn@Ubuntu2021-VB] - [22:32:24] - [~]
>sudo find / -name '?????' | wc -l
find: '/run/user/1000/gvfs': Permission denied
28390
[plasn@Ubuntu2021-VB] - [22:32:27] - [~]
>sudo find / -name '?????' 2>/dev/null | wc -l
28390
[plasn@Ubuntu2021-VB] - [22:32:31] - [~]
>

```

1. Polecenie wc pozwala nam na zliczanie różnych rzeczy, np.: bajtów, znaków, czy linii. Flaga "-l" służy do zliczania linii.
2. Jeżeli chcemy się pozbyć wiadomości z błędami z danego polecenie możemy przekierować te wiadomości do /dev/null, które samo w sobie usuwa wszystko to co do niego prześlemy.

Polecenie: `sudo find / -name '?????' 2>/dev/null | wc -l`



5. Jakie informacje możemy uzyskać wpisując polecenie `fdisk -l`

```

[plasn@Ubuntu2021-VB]-[22:48:48]-[-]
->sudo fdisk -l
Disk /dev/loop0: 55,32 MiB, 58007552 bytes, 113296 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop1: 217,89 MiB, 228478976 bytes, 446248 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop2: 62,09 MiB, 65105920 bytes, 127160 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop3: 50,67 MiB, 53133312 bytes, 103776 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop4: 30,94 MiB, 32440320 bytes, 63360 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/sda: 150 GiB, 161061273600 bytes, 314572800 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: E202B1E5-F7E4-4CD6-B6A1-7609437628A9

Device          Start      End      Sectors  Size Type
/dev/sda1        2048      999423    997376  487M Linux filesystem
/dev/sda2        999424    90998783 89999360 42,9G Linux filesystem
/dev/sda3       90998784 240998399 149999616 71,5G Linux filesystem
/dev/sda4       240998400 248997887  7999488   3,8G Linux swap

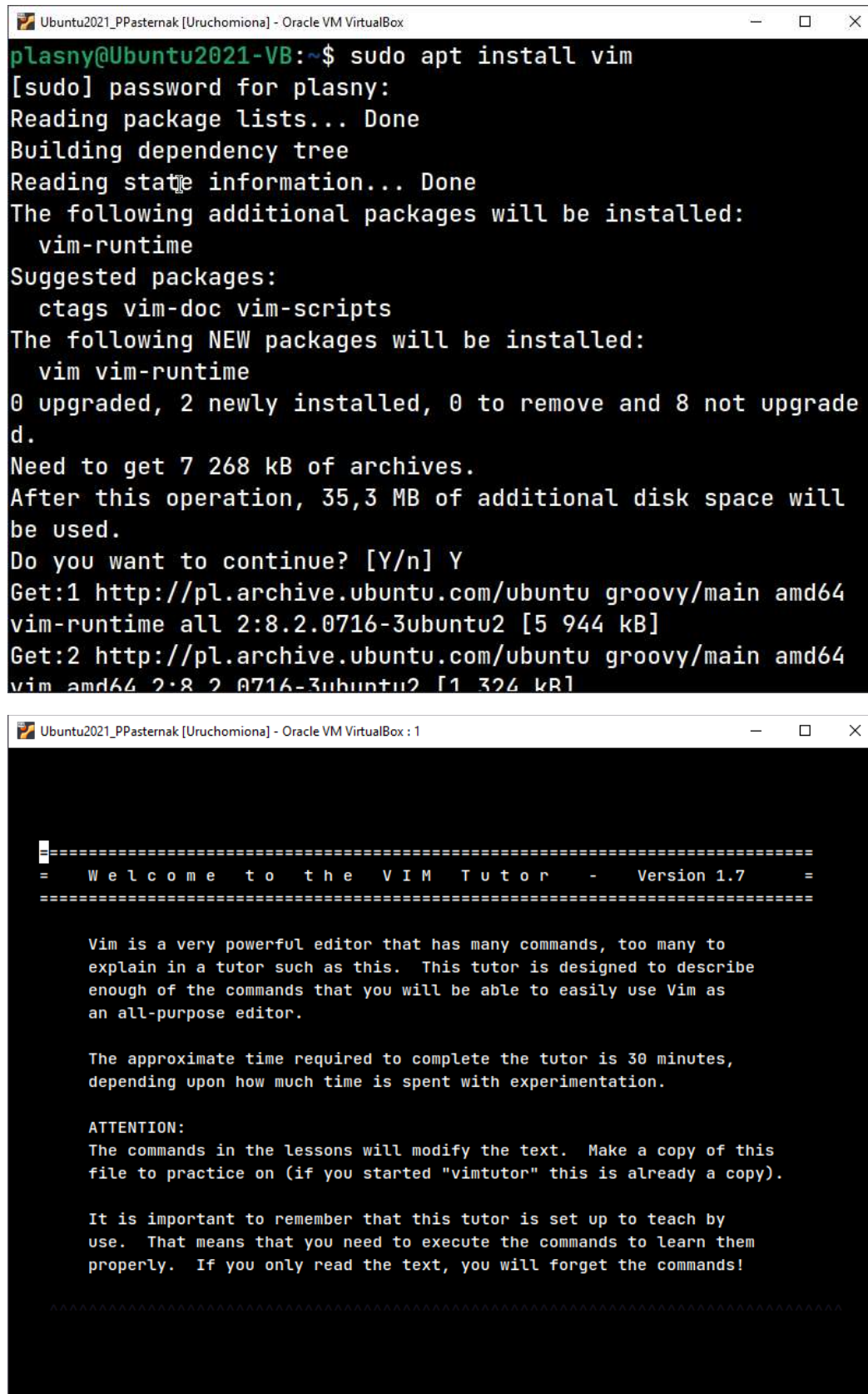
Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xc243a338

Device  Boot  Start      End  Sectors  Size Id Type
/dev/sdb1  2048 10487807 10485760   5G 83 Linux
/dev/sdb2 10487808 20971519 10483712   5G 83 Linux
[plasn@Ubuntu2021-VB]-[22:50:11]-[-]
->

```

`fdisk -l` -> Wyświetl tabele partycji dla określonych urządzeń, a następnie wychodzi.

6. Zainstaluj program VIM – wpisz polecenie `vimtutor` – postępuj wg wskazówek



The first screenshot shows a terminal window titled 'Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox'. The user 'plasny' is at the prompt and has entered the command `sudo apt install vim`. The terminal output shows the package manager's response, including the installation of `vim` and `vim-runtime`. The second screenshot shows the same terminal window after the user has entered `vimtutor`. The screen displays the 'VIM Tutor - Version 1.7' welcome message, which includes instructions on how to use the tutor and a warning to execute commands to learn them properly.

```

plasny@Ubuntu2021-VB:~$ sudo apt install vim
[sudo] password for plasny:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 8 not upgraded.
Need to get 7 268 kB of archives.
After this operation, 35,3 MB of additional disk space will
be used.
Do you want to continue? [Y/n] Y
Get:1 http://pl.archive.ubuntu.com/ubuntu groovy/main amd64
vim-runtime all 2:8.2.0716-3ubuntu2 [5 944 kB]
Get:2 http://pl.archive.ubuntu.com/ubuntu groovy/main amd64
vim amd64 2:8.2.0716-3ubuntu2 [1 324 kB]

```

```

=====
=  W e l c o m e   t o   t h e   V I M   T u t o r   -   V e r s i o n 1.7   =
=====

Vim is a very powerful editor that has many commands, too many to
explain in a tutor such as this.  This tutor is designed to describe
enough of the commands that you will be able to easily use Vim as
an all-purpose editor.

The approximate time required to complete the tutor is 30 minutes,
depending upon how much time is spent with experimentation.

ATTENTION:
The commands in the lessons will modify the text.  Make a copy of this
file to practice on (if you started "vimtutor" this is already a copy).

It is important to remember that this tutor is set up to teach by
use.  That means that you need to execute the commands to learn them
properly.  If you only read the text, you will forget the commands!

*****

```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 1 SUMMARY

1. The cursor is moved using either the arrow keys or the hjkl keys.
   h (left)      j (down)      k (up)      l (right)

2. To start Vim from the shell prompt type: vim FILENAME <ENTER>

3. To exit Vim type:      <ESC>  :q!  <ENTER>  to trash all changes.
   OR type:      <ESC>  :wq  <ENTER>  to save the changes.

4. To delete the character at the cursor type: x

5. To insert or append text type:
   i  type inserted text  <ESC>      insert before the cursor
   A  type appended text  <ESC>      append after the line

NOTE: Pressing <ESC> will place you in Normal mode or will cancel
      an unwanted and partially completed command.

Now continue with lesson 2.

*****
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 2 SUMMARY

1. To delete from the cursor up to the next word type: dw
2. To delete from the cursor to the end of a line type: d$
3. To delete a whole line type: dd

4. To repeat a motion prepend it with a number: 2w
5. The format for a change command is:
   operator [number] motion
   where:
   operator - is what to do, such as d for delete
   [number] - is an optional count to repeat the motion
   motion - moves over the text to operate on, such as w (word),
           $ (to the end of line), etc.

6. To move to the start of the line use a zero: 0

7. To undo previous actions, type: u (lowercase u)
   To undo all the changes on a line, type: U (capital U)
   To undo the undo's, type: CTRL-R

*****
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 3 SUMMARY

1. To put back text that has just been deleted, type  p . This puts the
   deleted text AFTER the cursor (if a line was deleted it will go on the
   line below the cursor).

2. To replace the character under the cursor, type  r  and then the
   character you want to have there.

3. The change operator allows you to change from the cursor to where the
   motion takes you. eg. Type  ce  to change from the cursor to the end of
   the word,  c$  to change to the end of a line.

4. The format for change is:

      c  [number]  motion

Now go on to the next lesson.
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 4 SUMMARY

1. CTRL-G  displays your location in the file and the file status.
      G  moves to the end of the file.
   number G  moves to that line number.
      gg  moves to the first line.

2. Typing  /  followed by a phrase searches FORWARD for the phrase.
   Typing  ?  followed by a phrase searches BACKWARD for the phrase.
   After a search type  n  to find the next occurrence in the same direction
   or  N  to search in the opposite direction.
   CTRL-O takes you back to older positions, CTRL-I to newer positions.

3. Typing  %  while the cursor is on a (,),[,],{, or } goes to its match.

4. To substitute new for the first old in a line type      :s/old/new
   To substitute new for all 'old's on a line type         :s/old/new/g
   To substitute phrases between two line #'s type         :#,s/old/new/g
   To substitute all occurrences in the file type           :%s/old/new/g
   To ask for confirmation each time add 'c'               :%s/old/new/gc
```



```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 5 SUMMARY

1. :!command executes an external command.

Some useful examples are:
(Windows)      (Unix)
:!dir           :!ls           - shows a directory listing.
:!del FILENAME :!rm FILENAME  - removes file FILENAME.

2. :w FILENAME writes the current Vim file to disk with name FILENAME.

3. v motion :w FILENAME saves the Visually selected lines in file
   FILENAME.

4. :r FILENAME retrieves disk file FILENAME and puts it below the
   cursor position.

5. :r !dir reads the output of the dir command and puts it below the
   cursor position.

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 6 SUMMARY

1. Type o to open a line BELOW the cursor and start Insert mode.
   Type O to open a line ABOVE the cursor.

2. Type a to insert text AFTER the cursor.
   Type A to insert text after the end of the line.

3. The e command moves to the end of a word.

4. The y operator yanks (copies) text, p puts (pastes) it.

5. Typing a capital R enters Replace mode until <ESC> is pressed.

6. Typing ":set xxx" sets the option "xxx". Some options are:
   'ic' 'ignorecase'      ignore upper/lower case when searching
   'is' 'incsearch'       show partial matches for a search phrase
   'hls' 'hlsearch'       highlight all matching phrases
   You can either use the long or the short option name.

7. Prepend "no" to switch an option off: :set noic

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

Lesson 7 SUMMARY

1. Type :help or press <F1> or <HELP> to open a help window.
2. Type :help cmd to find help on cmd .
3. Type CTRL-W CTRL-W to jump to another window.
4. Type :q to close the help window.
5. Create a vimrc startup script to keep your preferred settings.
6. When typing a : command, press CTRL-D to see possible completions.
   Press <TAB> to use one completion.

*****
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

This concludes the Vim Tutor. It was intended to give a brief overview of
the Vim editor, just enough to allow you to use the editor fairly easily.
It is far from complete as Vim has many many more commands. Read the user
manual next: ":help user-manual".

For further reading and studying, this book is recommended:
    Vim - Vi Improved - by Steve Oualline
    Publisher: New Riders
The first book completely dedicated to Vim. Especially useful for beginners.
There are many examples and pictures.
See http://iccf-holland.org/click5.html

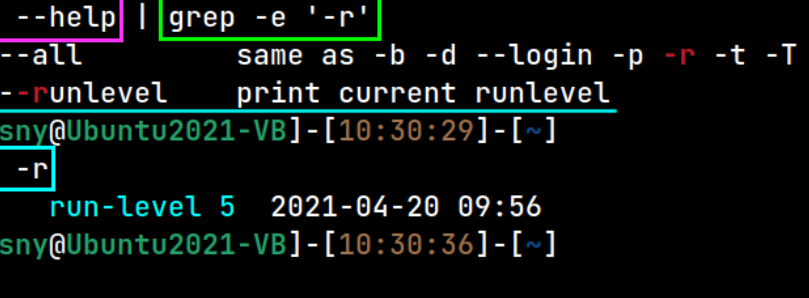
This book is older and more about Vi than Vim, but also recommended:
    Learning the Vi Editor - by Linda Lamb
    Publisher: O'Reilly & Associates Inc.
It is a good book to get to know almost anything you want to do with Vi.
The sixth edition also includes information on Vim.

This tutorial was written by Michael C. Pierce and Robert K. Ware,
Colorado School of Mines using ideas supplied by Charles Smith,
Colorado State University. E-mail: bware@mines.colorado.edu.

Modified for Vim by Bram Moolenaar.
*****
```

## 7. Jak działają polecenia w terminalu

- Who –r co oznacza odpowiedź systemu



```

[plasn@Ubuntu2021-VB]-[10:30:27]-[~]
>who --help | grep -e '-r'
-a, --all             same as -b -d --login -p -r -t -T -u
-r, --runlevel        print current runlevel
[plasn@Ubuntu2021-VB]-[10:30:29]-[~]
>who -r
run-level 5  2021-04-20 09:56
[plasn@Ubuntu2021-VB]-[10:30:36]-[~]
>

```

1. Polecenie wyświetla pomoc dotycząc komendy who.
2. Polecenie to znajduje wszystkie wzory, które podamy, w pliku lub wyniku komendy. Flaga -e znaczy, że następna rzecz, którą wpisujemy będzie interpretowana jako wzór (nawet pomimo "-").
3. Jak możemy wyczytać z pomocy, polecenie "who" z flagą "-r" wyświetla jaki mamy aktualnie runlevel.

- Runlevel –co to za numer

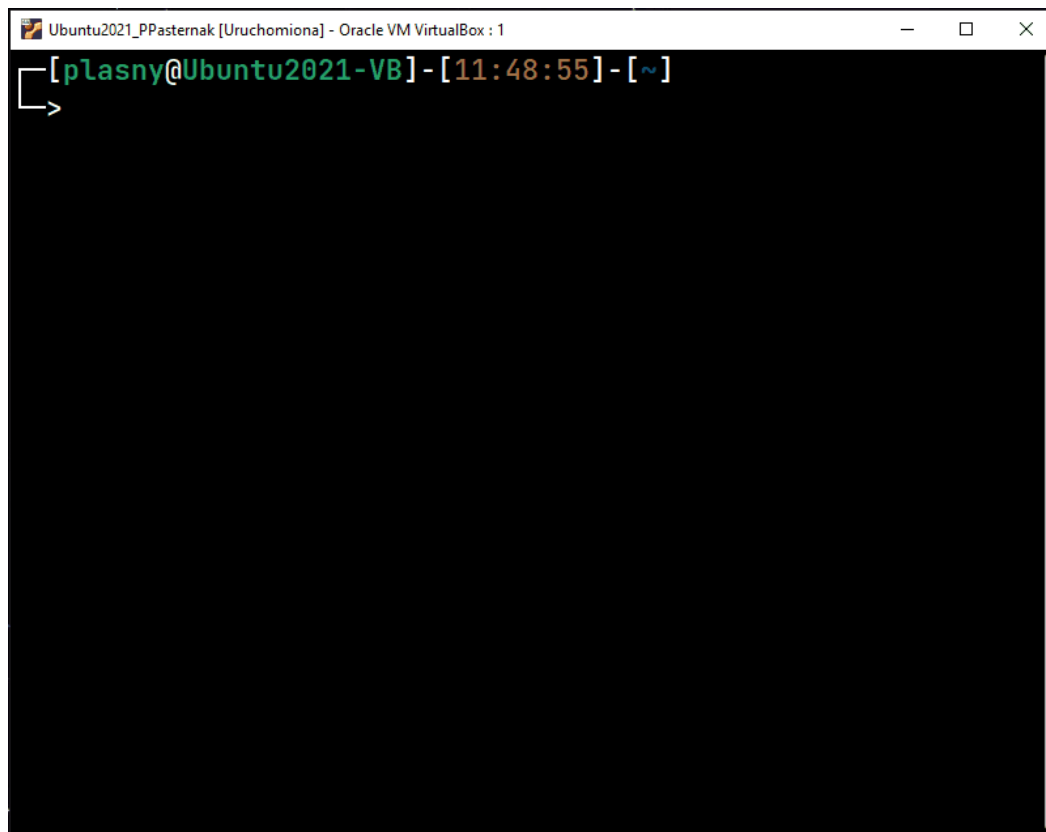
Runlevel to jeden z trybów, na których będzie działał, oparty na systemie Unix system operacyjny. Każdy poziom działania ma określoną liczbę usług zatrzymywanych lub uruchamianych, co daje użytkownikowi kontrolę nad zachowaniem maszyny. Konwencjonalnie istnieje siedem poziomów pracy, ponumerowanych od zera do sześciu.

Po załadowaniu jądra Linuksa program `init` odczytuje plik `/etc/inittab`, aby określić zachowanie dla każdego poziomu działania. O ile użytkownik nie określi innej wartości jako parametru rozruchu jądra, system podejmie próbę wprowadzenia (uruchomienia) domyślnego poziomu działania.

Run Level	Mode	Action
0	Halt	Shuts down system
1	Single-User Mode	Does not configure network interfaces, start daemons, or allow non-root logins
2	Multi-User Mode	Does not configure network interfaces or start daemons.
3	Multi-User Mode with Networking	Starts the system normally.
4	Undefined	Not used/User-definable
5	X11	As runlevel 3 + display manager(X)
6	Reboot	Reboots the system

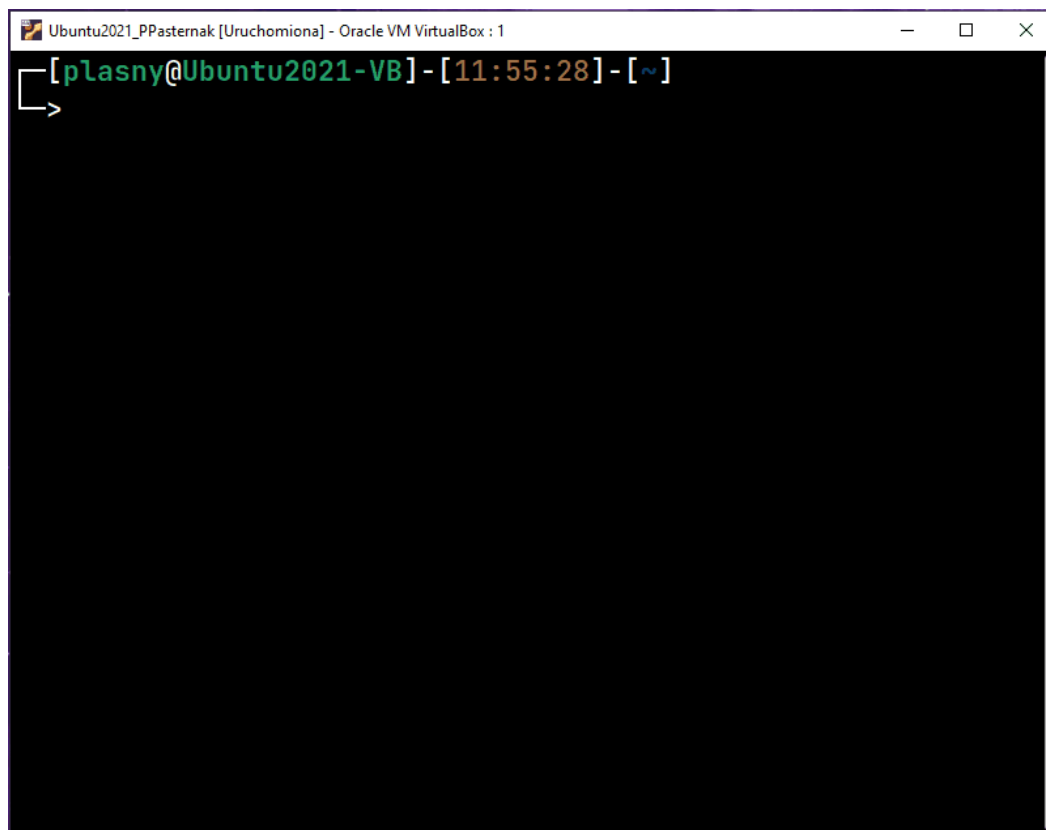
➔ <https://www.liquidweb.com/kb/linux-runlevels-explained/>

- Init 0



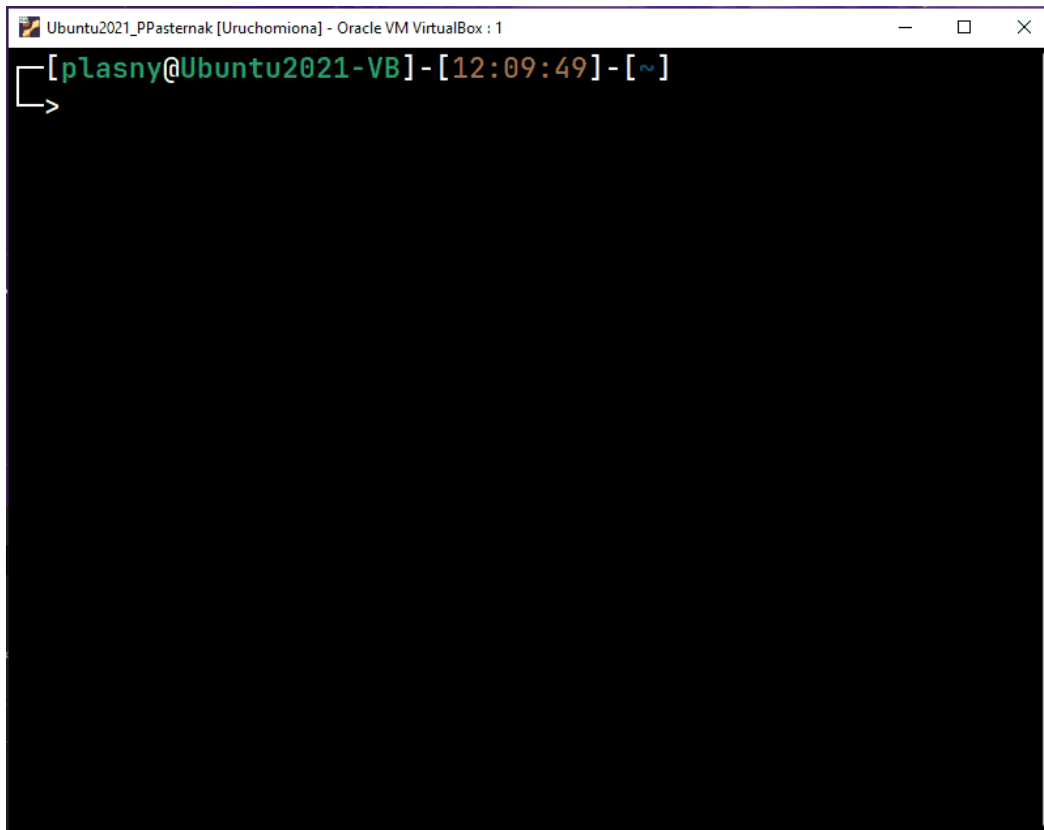
A screenshot of a terminal window titled "Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1". The terminal has a black background with green text. The prompt is "[płasný@Ubuntu2021-VB] - [11:48:55] - [~]". A white cursor is positioned at the end of the prompt, and a white arrow points to the right below the prompt.

- Init 6



A screenshot of a terminal window titled "Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1". The terminal has a black background with green text. The prompt is "[płasný@Ubuntu2021-VB] - [11:55:28] - [~]". A white cursor is positioned at the end of the prompt, and a white arrow points to the right below the prompt.

- Init 1



- Jak jest przeznaczenie Init

Init to pierwszy proces uruchamiany podczas rozruchu systemu. Jest to demon, który działa do momentu zamknięcia systemu. Init jest bezpośrednim lub pośrednim przodkiem wszystkich innych procesów i automatycznie przyjmuje wszystkie osierocone procesy. Jest uruchamiany przez jądro przy użyciu zakodowanej na stałe nazwy pliku; jeśli jądro nie może go uruchomić, nastąpi panika. Init ma zwykle przypisany identyfikator procesu 1.

**Skrypty inicjujące (lub rc) są uruchamiane przez proces init, aby zagwarantować podstawową funkcjonalność podczas uruchamiania i zamykania systemu. Obejmuje to (od) montowanie systemów plików i uruchamianie demonów. Menedżer serwisu idzie o krok dalej, zapewniając aktywną kontrolę nad uruchomionymi procesami lub nadzorując proces. Przykładem jest monitorowanie awarii i odpowiednie ponowne uruchamianie procesów.**

Te komponenty łączą się z systemem init. Niektóre inity zawierają menedżera usług w procesie inicjalizacji lub mają skrypty inicjujące w bliskim związku z nimi.

→ <https://wiki.archlinux.org/index.php/init>

- Poweroff czym różni się od halt

**Halt** – nakazuje sprzętowi zatrzymanie wszystkich funkcji procesora, ale pozostawia go włączanego.

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasn@Ubuntu2021-VB] - [12:26:17] - [~]
->halt --help
halt [OPTIONS...]

Halt the system.

Options:
  --help      Show this help
  --halt      Halt the machine
  -p --poweroff Switch off the machine
  --reboot    Reboot the machine
  -f --force   Force immediate halt/power-off/reboot
  -w --wtmp-only Don't halt/power-off/reboot, just write wtmp record
  -d --no-wtmp Don't write wtmp record
  --no-wall   Don't send wall message before halt/power-off/reboot

See the halt(8) man page for details.
[plasn@Ubuntu2021-VB] - [12:26:20] - [~]
->
```

Z kolei **poweroff** wysyła sygnał ACPI, który nakazuje systemowi wyłączenie zasilania.

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasn@Ubuntu2021-VB] - [12:27:24] - [~]
->poweroff --help
poweroff [OPTIONS...]

Power off the system.

Options:
  --help      Show this help
  --halt      Halt the machine
  -p --poweroff Switch off the machine
  --reboot    Reboot the machine
  -f --force   Force immediate halt/power-off/reboot
  -w --wtmp-only Don't halt/power-off/reboot, just write wtmp record
  -d --no-wtmp Don't write wtmp record
  --no-wall   Don't send wall message before halt/power-off/reboot

See the halt(8) man page for details.
[plasn@Ubuntu2021-VB] - [12:27:25] - [~]
->
```

- Shutdown -c jakie ma znaczenie

**Shutdown -c** pozwala nam na anulowanie następnego wyłączenia/zatrzymania/uruchomienia ponownie systemu.

```

[plasnny@Ubuntu2021-VB] - [12:35:50] - [~]
-> shutdown --help | grep -e '-' -e '-c'
shutdown [OPTIONS...] [TIME] [WALL...]

Shut down the system.

Options:
  --help          Show this help
  -H --halt       Halt the machine
  -P --poweroff   Power-off the machine
  -r --reboot     Reboot the machine
  -h             Equivalent to --poweroff, overridden by --halt
  -k             Don't halt/power-off/reboot, just send warnings
  --no-wall      Don't send wall message before halt/power-off/reboot
  -c             Cancel a pending shutdown

See the shutdown(8) man page for details.
[plasnny@Ubuntu2021-VB] - [12:35:54] - [~]

```

```

[plasnny@Ubuntu2021-VB] - [12:43:37] - [~]
-> shutdown
Shutdown scheduled for Tue 2021-04-20 12:44:40 CEST, use 'shutdown -c' to cancel.
[plasnny@Ubuntu2021-VB] - [12:43:40] - [~]
-> shutdown -c
[plasnny@Ubuntu2021-VB] - [12:43:42] - [~]
->

```

1. Wyłączenie systemu za minutę.
2. Anulowanie wyłączenia systemu.

- lshw

**lshw** pozwala nam na wylistowanie wszystkich podłączonych urządzeń

```

Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
LSHW(1) LSHW(1)

NAME
    lshw - list hardware

SYNOPSIS
    lshw [ -version ]

    lshw [ -help ]

    lshw [ -X ]

    lshw [ [ -html ] [ -short ] [ -xml ] [ -json ]
    [ -businfo ] ] [ -dump filename ] [ -class
    class... ] [ -disable test... ] [ -enable test...
    ] [ -sanitize ] [ -numeric ] [ -quiet ]

DESCRIPTION
    lshw is a small tool to extract detailed informa-
    19,1 Top
  
```

```

Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasn@Ubuntu2021-VB] - [12:39:51] - [~]
>sudo lshw
ubuntu2021-vb
  description: Computer
  product: VirtualBox
  vendor: innotek GmbH
  version: 1.2
  serial: 0
  width: 64 bits
  capabilities: smbios-2.5 dmi-2.5 smp vsyscall32
  configuration: family=Virtual Machine uuid=616BD928-1E32
-0449-A0EF-733291B5FA5F
*-core
  description: Motherboard
  product: VirtualBox
  vendor: Oracle Corporation
  physical id: 0
  version: 1.2
  serial: 0
*-firmware
  description: BIOS
  
```



- ip a

Polecenie **ip a** wyświetla nam informacje dotyczące sieci i podpiętych do naszego komputera kart sieciowych i pętli zwrotnych.

```

IP(8)                                     Linux                                     IP(8)

NAME

    ip - show / manipulate routing, network devices,
    interfaces and tunnels

SYNOPSIS

    ip [ OPTIONS ] OBJECT { COMMAND | help }

    ip [ -force ] -batch filename

    OBJECT := { link | address | addrlabel | route |
                rule | neigh | ntable | tunnel | tuntap |
                maddress | mroute | mrule | monitor | xfrm
                | netns | l2tp | tcp_metrics | token | mac-
                sec | vrf }

    OPTIONS := { -V[ersion] | -h[uman-readable] |
                 -s[tatistics] | -d[etails] | -r[esolve] |
                                     1,1                                     Top

```

```

[plasnny@Ubuntu2021-VB] - [12:45:45] - [~]
[plasnny@Ubuntu2021-VB] - [12:45:45] - [~]
>ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state
UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc
fq_codel state UP group default qlen 1000
    link/ether 08:00:27:9d:0e:6e brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic no
prefixroute enp0s3
        valid_lft 84541sec preferred_lft 84541sec
    inet6 fe80::61d3:99cf:dd1a:3450/64 scope link noprefixro
ute
        valid_lft forever preferred_lft forever
[plasnny@Ubuntu2021-VB] - [12:45:51] - [~]
>

```

- `lscpu`

Polecenie `lscpu` wyświetla nam informacje na temat procesora, jego architektury itd.

```

Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
LSCPU(1) User Commands LSCPU(1)

NAME
    lscpu - display information about the CPU architec-
    ture

SYNOPSIS
    lscpu [options]

DESCRIPTION
    lscpu gathers CPU architecture information from
    sysfs, /proc/cpuinfo and any applicable architec-
    ture-specific libraries (e.g. librtas on Powerpc).
    The command output can be optimized for parsing or
    for easy readability by humans. The information
    includes, for example, the number of CPUs, threads,
    cores, sockets, and Non-Uniform Memory Access
    (NUMA) nodes. There is also information about the
    CPU caches and cache sharing, family, model, bo-
    1,1 Top
  
```

```

Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasnny@Ubuntu2021-VB] - [12:49:44] - [-]
->lscpu
Architecture:                x86_64
CPU op-mode(s):              32-bit, 64-bit
Byte Order:                  Little Endian
Address sizes:                39 bits physical, 48 bits virtual
CPU(s):                      4
On-line CPU(s) list:         0-3
Thread(s) per core:          1
Core(s) per socket:          4
Socket(s):                   1
NUMA node(s):                1
Vendor ID:                   GenuineIntel
CPU family:                   6
Model:                       158
Model name:                   Intel(R) Core(TM) i7-8700K CPU @ 3.70G
                              Hz
Stepping:                    10
CPU MHz:                     3696.006
BogoMIPS:                    7392.01
Hypervisor vendor:           KVM
Virtualization type:         full
L1d cache:                   128 KiB
L1i cache:                   128 KiB
  
```

- `hdparm -i /dev/hda`

```

HDPARM(8)                                System Manager's Manual                                HDPARM(8)

NAME
    hdparm - get/set SATA/IDE device parameters

SYNOPSIS
    hdparm [options] [device ...]

DESCRIPTION
    hdparm provides a command line interface to various
    kernel interfaces supported by the Linux
    SATA/PATA/SAS "libata" subsystem and the older IDE
    driver subsystem.  Many newer (2008 and later) USB
    drive enclosures now also support "SAT" (SCSI-ATA
    Command Translation) and therefore may also work
    with hdparm.  E.g. recent WD "Passport" models and
    recent NexStar-3 enclosures.  Some options may work
    correctly only with the latest kernels.

                                     1,1                                Top

```

Polecenie **`hdparm -i (dysk)`** wyświetla wszelkie dostępne informacje na temat dysku.

```

[plasn@Ubuntu2021-VB]-[12:58:52]-[~]
->hdparm -h | grep -e '-i '
-i    Display drive identification
[plasn@Ubuntu2021-VB]-[12:58:56]-[~]
->sudo hdparm -i /dev/sda

/dev/sda:

Model=VBOX HARDDISK, FwRev=1.0, SerialNo=VB0f200ef0-6240bda3
Config={ Fixed }
RawCHS=16383/16/63, TrkSize=0, SectSize=512, ECCbytes=0
BuffType=DualPortCache, BuffSize=256kB, MaxMultSect=128, MultSect=128
CurCHS=16383/16/63, CurSects=16514064, LBA=yes, LBAsects=314572800
IORDY=yes, tPIO={min:120,w/IORDY:120}, tDMA={min:120,rec:120}
PIO modes:  pio0 pio3 pio4
DMA modes:   mdma0 mdma1 mdma2
UDMA modes:  udma0 udma1 udma2 udma3 udma4 udma5 *udma6
AdvancedPM=no WriteCache=enabled
Drive conforms to: unknown: ATA/ATAPI-1,2,3,4,5,6

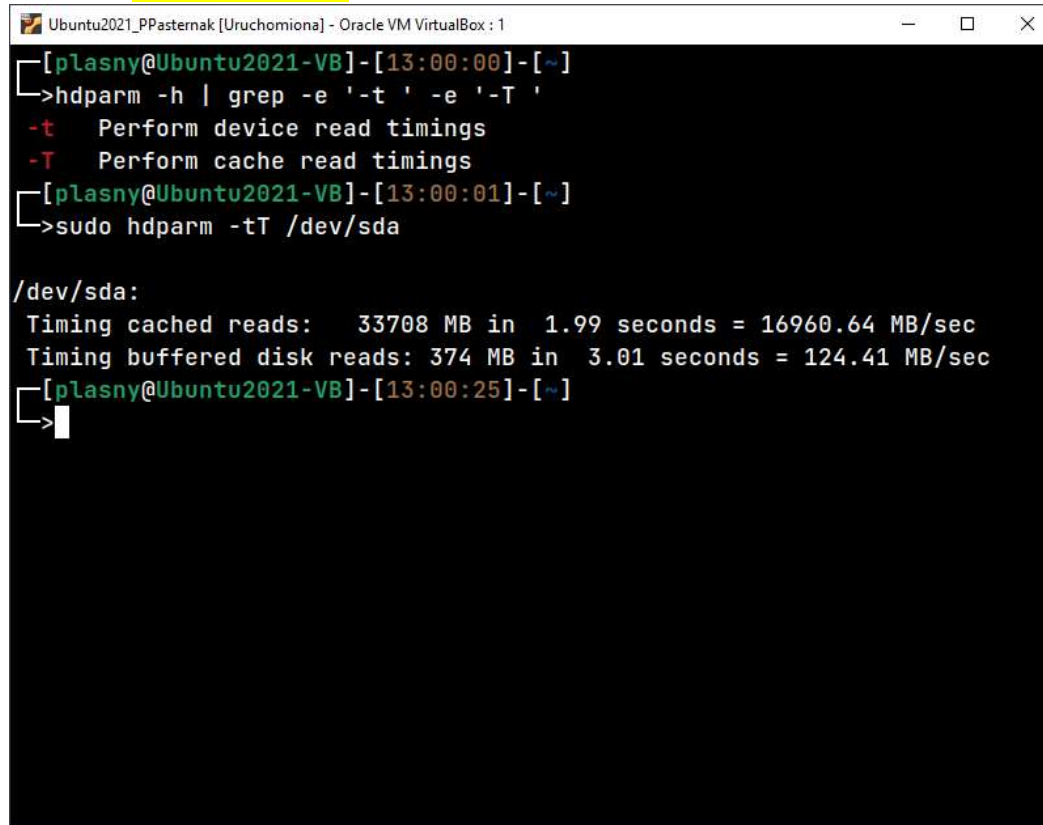
* signifies the current active mode

[plasn@Ubuntu2021-VB]-[12:58:59]-[~]
->

```

- `hdparm -tT /dev/sda`

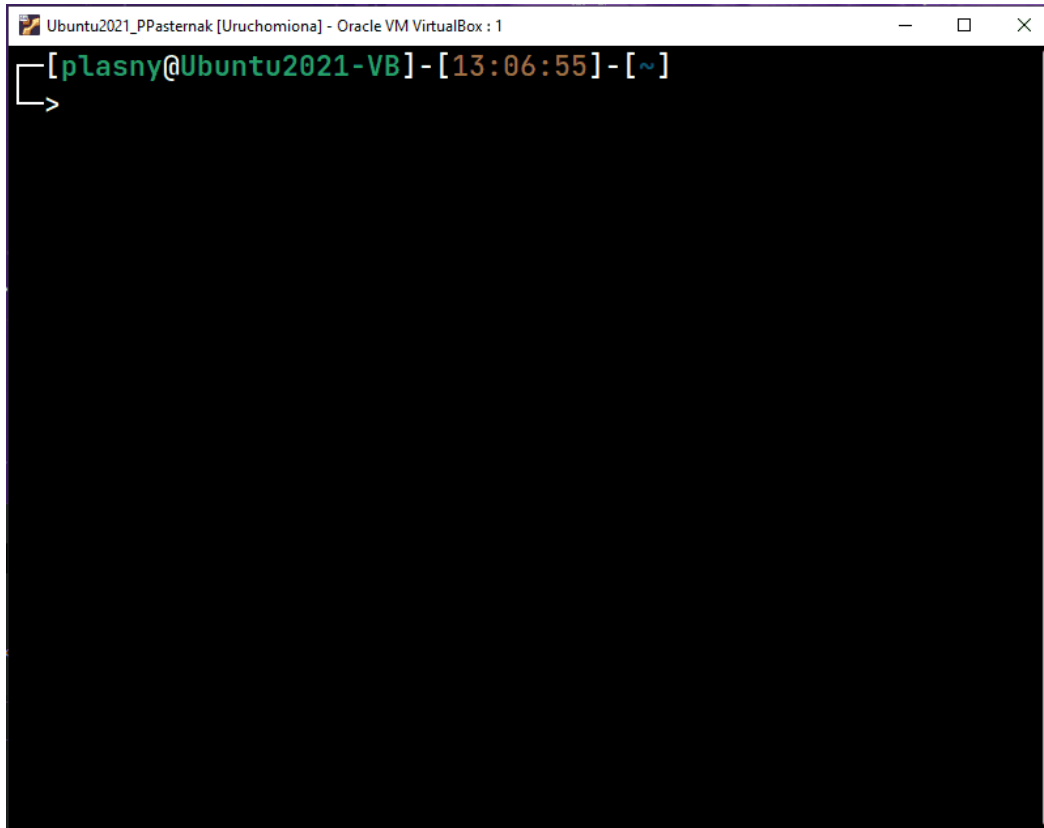
Polecenie **`hdparm -tT (dysk)`** testuje prędkości odczytu urządzenia i jego pamięci (buforu).



```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasny@Ubuntu2021-VB]-[13:00:00]-[~]
[>hdparm -h | grep -e '-t ' -e '-T '
-t   Perform device read timings
-T   Perform cache read timings
[plasny@Ubuntu2021-VB]-[13:00:01]-[~]
[>sudo hdparm -tT /dev/sda

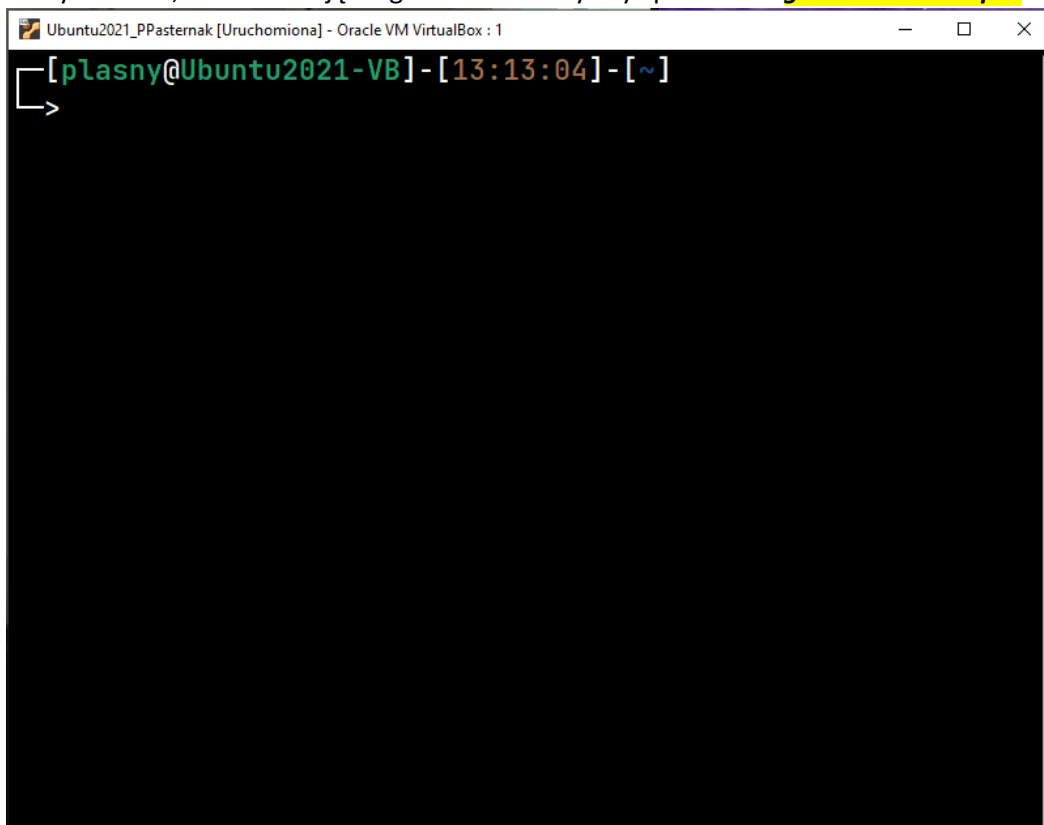
/dev/sda:
Timing cached reads:   33708 MB in  1.99 seconds = 16960.64 MB/sec
Timing buffered disk reads: 374 MB in  3.01 seconds = 124.41 MB/sec
[plasny@Ubuntu2021-VB]-[13:00:25]-[~]
[>
```

8. Jakim poleceniem możemy się wylogować – pokaż działanie  
Możemy zastosować polecenie **kill -KILL -u (użytkownik)** będzie ono uniwersalne dla wszystkich systemów gnu/linux.

A terminal window titled 'Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1'. The prompt is '[płasnny@Ubuntu2021-VB] - [13:06:55] - [~]' followed by a cursor and a right arrow.

```
[płasnny@Ubuntu2021-VB] - [13:06:55] - [~]  
→
```

Na systemach, które działają na gnomie możemy użyć polecenia: **gnome-session-quit**

A terminal window titled 'Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1'. The prompt is '[płasnny@Ubuntu2021-VB] - [13:13:04] - [~]' followed by a cursor and a right arrow.

```
[płasnny@Ubuntu2021-VB] - [13:13:04] - [~]  
→
```



9. Jakim poleceniem możemy sprawdzić ile czasu działa system – jakie jeszcze informacje jesteśmy w stanie przy okazji wczytać

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasnny@Ubuntu2021-VB] - [13:17:19] - [~]
>uptime --help

Usage:
  uptime [options]

Options:
  -p, --pretty      show uptime in pretty format
  -h, --help        display this help and exit
  -s, --since       system up since
  -V, --version     output version information and exit

For more details see uptime(1).
[plasnny@Ubuntu2021-VB] - [13:17:21] - [~]
>
```

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasnny@Ubuntu2021-VB] - [13:17:38] - [~]
>uptime
13:17:41 up 1:21, 1 user, load average: 0,06, 0,15, 0,10
[plasnny@Ubuntu2021-VB] - [13:17:41] - [~]
>uptime -p
up 1 hour, 21 minutes
[plasnny@Ubuntu2021-VB] - [13:17:45] - [~]
>uptime -s
2021-04-20 11:55:51
[plasnny@Ubuntu2021-VB] - [13:17:49] - [~]
>
```

**1. Polecenie uptime wyświetla nam kolejne informacje:**

- aktualny czas
- jak długo działa już system
- ilość zalogowanych użytkowników
- jakie obciążenie było przez ostatnie 1, 5, 15 minut

**2. Polecenie uptime z flagą "-p" pokazuje nam jak długo działa system w ładnym formacie.**

**3. Polecenie uptime z flagą "-s" pokazuje od kiedy działa system.**

## 10. Polecenie scrot jak działa – jeżeli nie ma jak je zainstalować

- Instalacja scrot

```

[plasnny@Ubuntu2021-VB]-[13:25:02]-[~]
└─>sudo apt install scrot
[sudo] password for plasnny:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are
no longer required:
  bacula-common libdouble-conversion3 libmd4c0
  libpcre2-16-0 libqt5core5a libqt5dbus5 libqt5gui5
  libqt5network5 libqt5svg5 libqt5widgets5
  libxcb-xinerama0 libxcb-xinput0 qt5-gtk-platformtheme
  qttranslations5-l10n
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  glib1 libid3tag0 libimlib2
The following NEW packages will be installed:
  glib1 libid3tag0 libimlib2 scrot
0 upgraded, 4 newly installed, 0 to remove and 0 not upgrade
d.
Need to get 249 kB of archives

```

- Informacje o scrot

```

[plasnny@Ubuntu2021-VB]-[13:28:18]-[~]
└─>scrot --help
Usage : scrot [OPTIONS]... [FILE]
Where FILE is the target file for the screenshot.
If FILE is not specified, a date-stamped file will be dropped in the
current directory.
See man scrot for more details
-h, --help                display this help and exit
-v, --version             output version information and exit
-D, --display             Set DISPLAY target other than current
-a, --autoselect          non-interactively choose a rectangle of x,y
,w,h
-b, --border              When selecting a window, grab wm border too
-c, --count               show a countdown before taking the shot
-d, --delay NUM           wait NUM seconds before taking a shot
-e, --exec APP            run APP on the resulting screenshot
-q, --quality NUM         Image quality (1-100) high value means
                          high size, low compression. Default: 75.
                          For lossless compression formats, like png,
                          low quality means high compression.
-m, --multidisp           For multiple heads, grab shot from each
                          and join them together.
-s, --select              interactively choose a window or rectangle
                          with the mouse

```

- Scrot -s

**Scrot -s** pozwala na zaznaczenie fragmentu ekranu i zrobieniu jego zrzutu.

```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1

-q, --quality NUM
    Image quality (1-100) high value means high
    size, low compression. Default: 75. (Effect
    differs depending on file format chosen).

-m, --multidisp
    For multiple heads, grab shot from each and
    join them together.

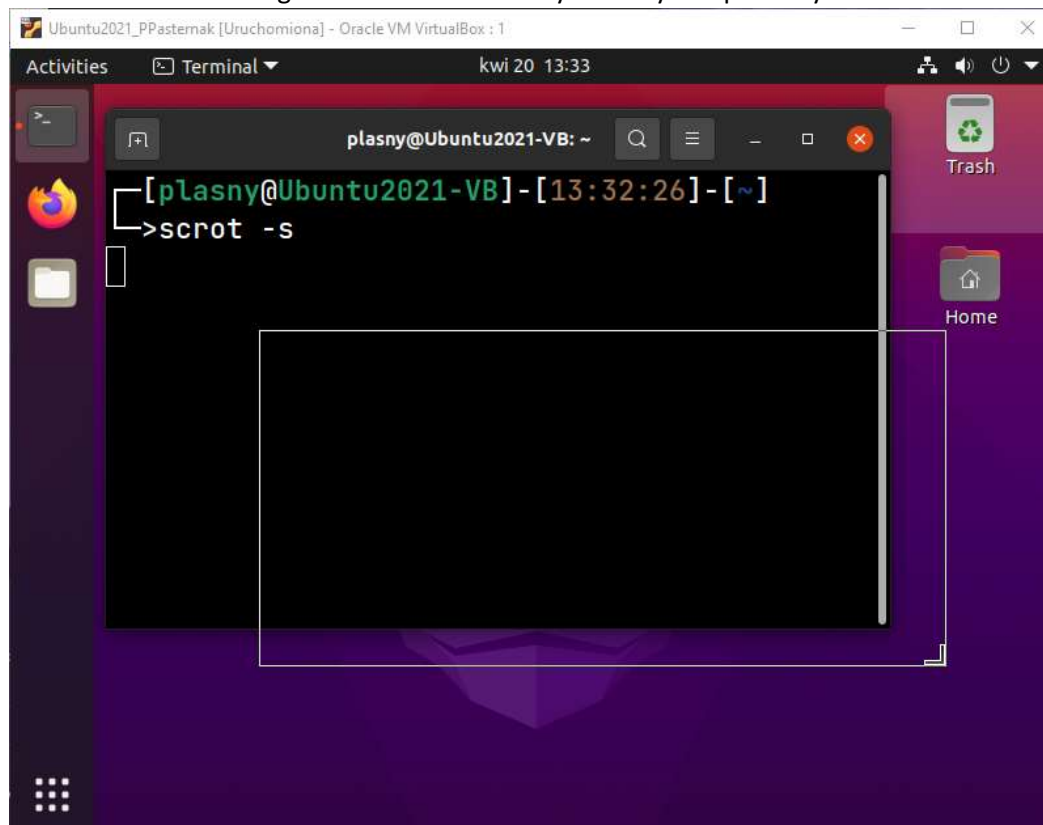
-s, --select
    Interactively select a window or rectangle
    with the mouse. See -l and -f options.

-l, --line
    Indicates the style of the line when the -s
    option is used. See SELECTION STYLE.

-f, --freeze
    Freeze the screen when the -s option is
    used. Default: 0.

65,8      34%
```

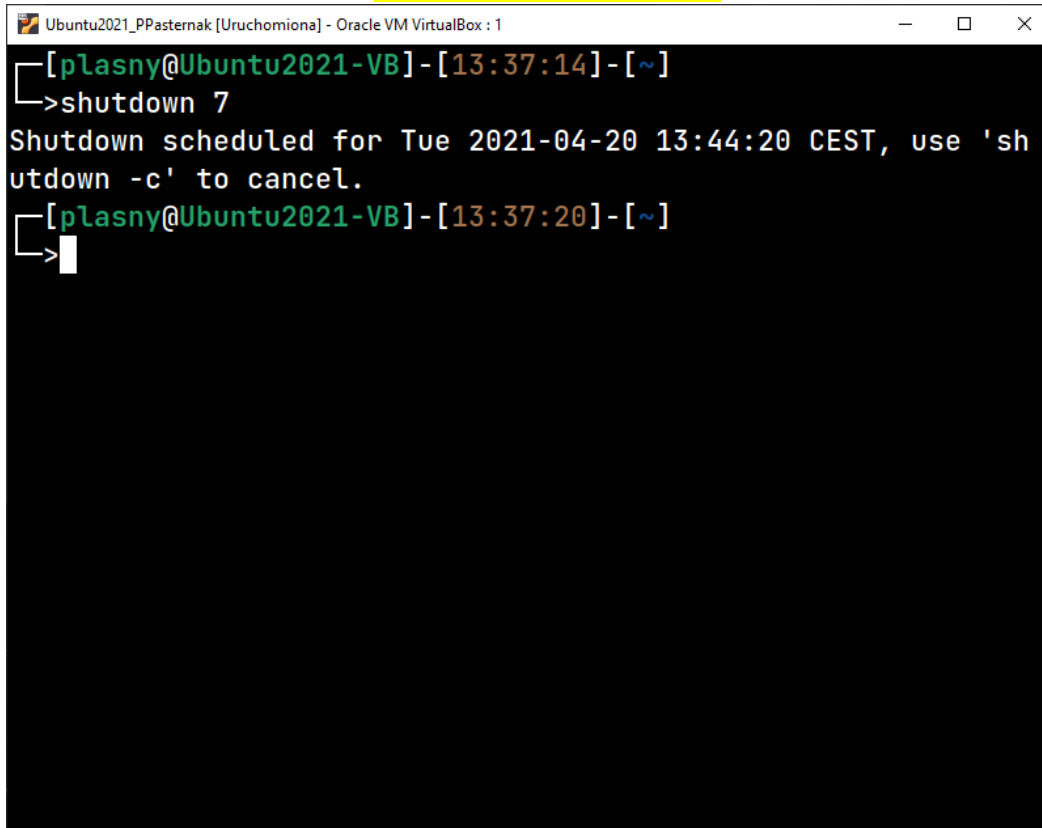
Proces zaznaczanie fragmentu ekranu możemy zobaczyć na poniższym zrzucie.





11. Jakim poleceniem można wyłączyć komputer 7 minut po wpisaniu formuły

Możemy to zrobić poleceniem **shutdown (czas w minutach)**



```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasnny@Ubuntu2021-VB] - [13:37:14] - [~]
-> shutdown 7
Shutdown scheduled for Tue 2021-04-20 13:44:20 CEST, use 'sh
utdown -c' to cancel.
[plasnny@Ubuntu2021-VB] - [13:37:20] - [~]
->
```

## 12. Wyświetl czas 5 ostatnich logowań użytkowników w systemie

Możemy zrobić to poleceniem **last** z flagą **-n** (ilość logowań).

```

Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasny@Ubuntu2021-VB] - [13:44:09] - [~]
->last --help

Usage:
  last [options] [<username>...] [<tty>...]

Show a listing of last logged in users.

Options:
  -<number>          how many lines to show
  -a, --hostlast     display hostnames in the last column
  -d, --dns          translate the IP number back into a hostname
  -f, --file <file>  use a specific file instead of /var/log/wtmp
  -F, --fulltimes     print full login and logout times and dates
  -i, --ip           display IP numbers in numbers-and-dots notation
  -n, --limit <number> how many lines to show
  -R, --nohostname   don't display the hostname field
  -s, --since <time> display the lines since the specified time
  -t, --until <time> display the lines until the specified time
  -p, --present <time> display who were present at the specified time
  -w, --fullnames     display full user and domain names
  -x, --system       display system shutdown entries and run level changes
  --time-format <format> show timestamps in the specified <format>:
                      notime|short|full|iso

  -h, --help         display this help
  -V, --version       display version

For more details see last(1)

```

```

Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasny@Ubuntu2021-VB] - [13:45:21] - [~]
->last -5
plasny  :0          :0          Tue Apr 20 13:16  still logged in
plasny  :0          :0          Tue Apr 20 13:13 - 13:13 (00:00)
plasny  :0          :0          Tue Apr 20 13:06 - 13:13 (00:06)
plasny  :0          :0          Tue Apr 20 12:17 - 13:06 (00:49)
plasny  :0          :0          Tue Apr 20 12:09 - 12:17 (00:07)

wtmp begins Mon Apr 19 20:15:50 2021
[plasny@Ubuntu2021-VB] - [13:45:24] - [~]
->

```

## 13. Co znajduje się w katalogach i plikach

- /etc/grub.d

Katalog ze skryptami pomocniczymi służącymi do identyfikacji partycji i znajdujących się na nich systemów operacyjnych. Możemy zresztą tworzyć własne skrypty, służące do dodawania kolejnych pozycji w menu w razie potrzeby.

```

[plasnny@Ubuntu2021-VB] - [13:48:42] - [~]
>ls -lA /etc/grub.d
total 132
-rwxr-xr-x 1 root root 10627 paź 1 2020 00_header
-rwxr-xr-x 1 root root 6258 paź 1 2020 05_debian_theme
-rwxr-xr-x 1 root root 17622 paź 1 2020 10_linux
-rwxr-xr-x 1 root root 42359 paź 1 2020 10_linux_zfs
-rwxr-xr-x 1 root root 12894 paź 1 2020 20_linux_xen
-rwxr-xr-x 1 root root 1992 sie 18 2020 20_memtest86+
-rwxr-xr-x 1 root root 12059 paź 1 2020 30_os-prober
-rwxr-xr-x 1 root root 1424 paź 1 2020 30_uefi-firmware
-rwxr-xr-x 1 root root 214 paź 1 2020 40_custom
-rwxr-xr-x 1 root root 216 paź 1 2020 41_custom
-rw-r--r-- 1 root root 483 paź 1 2020 README
[plasnny@Ubuntu2021-VB] - [13:48:44] - [~]
>

```

**Polecenie "ls" wyświetla zawartość katalogu. Flaga "-l" pozwala na wyświetlanie tych katalogów w liście, z kolei flaga "-A" na zobaczenie ukrytych plików.**

- /etc/default/grub

Plik ten zawiera podstawowe ustawienia, które bez problemu mogą zostać zmienione przez użytkownika. Wypisane są tutaj zmienne, które program rozruchowy będzie wykorzystywał, podczas generowania pliku grub.

```
## If you change this file, run 'update-grub' afterwards to u
pdate
# /boot/grub/grub.cfg.
# For full documentation of the options in this file, see:
#   info -f grub -n 'Simple configuration'

GRUB_DEFAULT=0
GRUB_TIMEOUT_STYLE=hidden
GRUB_TIMEOUT=0
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Deb
ian`
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"
GRUB_CMDLINE_LINUX=""

# Uncomment to enable BadRAM filtering, modify to suit your
needs
# This works with Linux (no patch required) and with any ker
nel that obtains
@
"/etc/default/grub" [readonly] 33L, 1209C 1,1      Top
```





- /etc/crontab

tabela programu cron posiadająca specjalny format oraz nazwa programu służącego do jej edycji.  
Służy do planowania zadań.

```

# /etc/crontab: system-wide crontab
# Unlike any other crontab you don't have to run the `crontab'
# command to install the new version when you edit this file
# and files in /etc/cron.d. These files also have username fields,
# that none of the other crontabs do.

SHELL=/bin/sh
PATH=/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin

# Example of job definition:
# .----- minute (0 - 59)
# | .----- hour (0 - 23)
# | | .----- day of month (1 - 31)
# | | | .----- month (1 - 12) OR jan,feb,mar,apr ...
# | | | | .---- day of week (0 - 6) (Sunday=0 or 7) OR sun,mon,tue,
wed,thu,fri,sat
# | | | | |
# * * * * * user-name command to be executed
17 * * * * root    cd / && run-parts --report /etc/cron.hourly
25 6 * * * root    test -x /usr/sbin/anacron || ( cd / && run-part
s --report /etc/cron.daily )
@
"/etc/crontab" [readonly] 22L, 1042C                                1,1                                Top

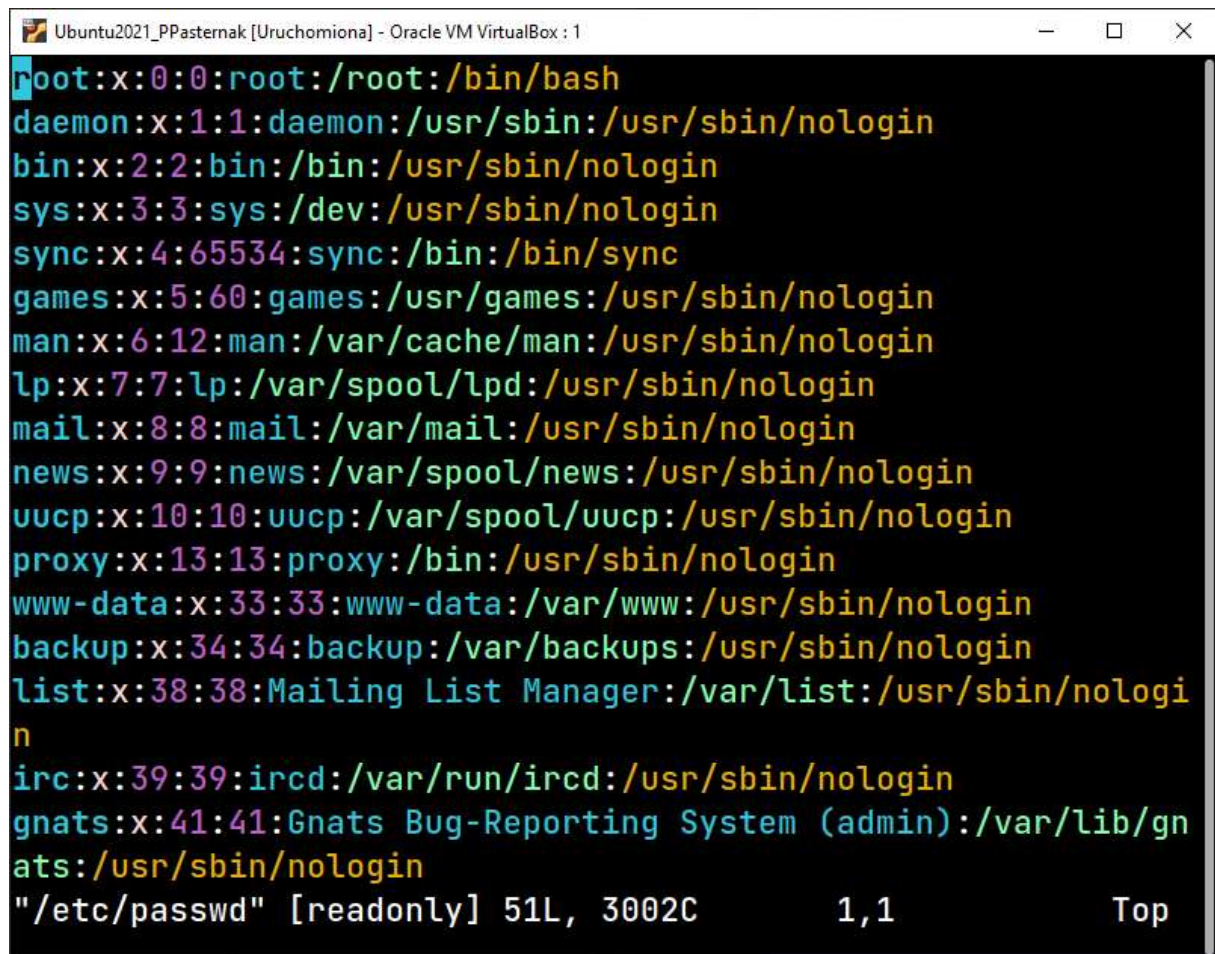
```



- /etc/passwd

Plik /etc/passwd jest plikiem z wartościami rozdzielonymi dwukropkami i zawiera następujące informacje:

- nazwa użytkownika,
- zaszyfrowane hasło,
- identyfikator użytkownika (UID),
- identyfikator grupy użytkownika (GID),
- pełna nazwa użytkownika (GECOS),
- katalog osobisty użytkownika,
- powłoka logowania.

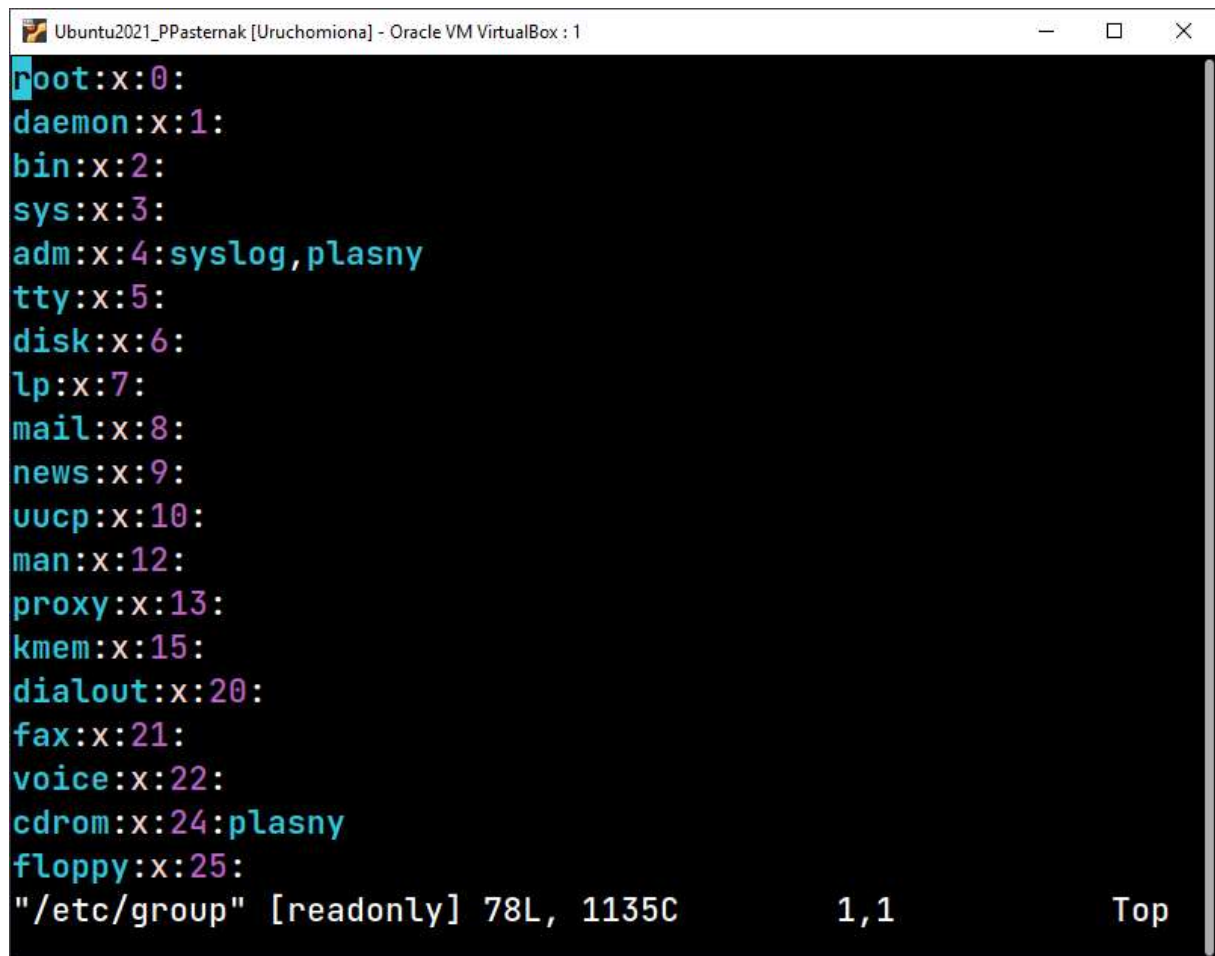


```
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
"/etc/passwd" [readonly] 51L, 3002C      1,1      Top
```



- /etc/group

Plik group zawiera liste wszystkich grup w systemie i należących do nich użytkowników.

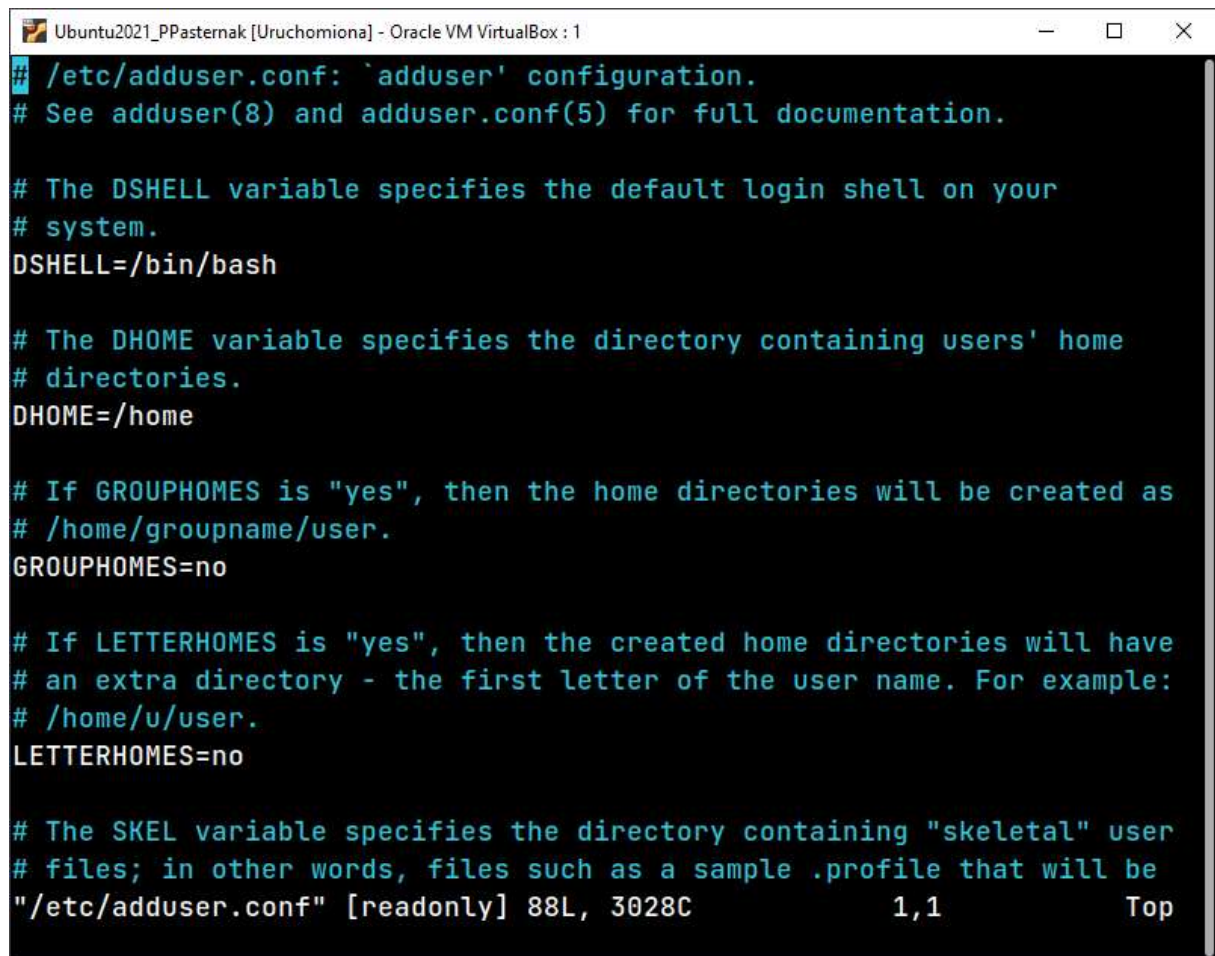


The screenshot shows a terminal window titled "Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1". The terminal displays the contents of the /etc/group file, listing system groups and their members. The groups listed are: root, daemon, bin, sys, adm, tty, disk, lp, mail, news, uucp, man, proxy, kmem, dialout, fax, voice, cdrom, and floppy. Some groups have members listed, such as 'syslog' and 'plasny' for the 'adm' group. At the bottom of the terminal, there is a status bar showing the file path "/etc/group", permissions "[readonly]", file size "78L, 1135C", and other details "1,1" and "Top".

```
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,plasny
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:
fax:x:21:
voice:x:22:
cdrom:x:24:plasny
floppy:x:25:
"/etc/group" [readonly] 78L, 1135C      1,1      Top
```

- /etc/adduser.conf

Plik adduser.conf zawiera konfiguracje poleceń adduser, addgroup, deluser, delgroup.

A screenshot of a terminal window titled 'Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1'. The terminal displays the configuration file /etc/adduser.conf. The text is as follows:

```
# /etc/adduser.conf: `adduser' configuration.
# See adduser(8) and adduser.conf(5) for full documentation.

# The DSHELL variable specifies the default login shell on your
# system.
DSHELL=/bin/bash

# The DHOME variable specifies the directory containing users' home
# directories.
DHOME=/home

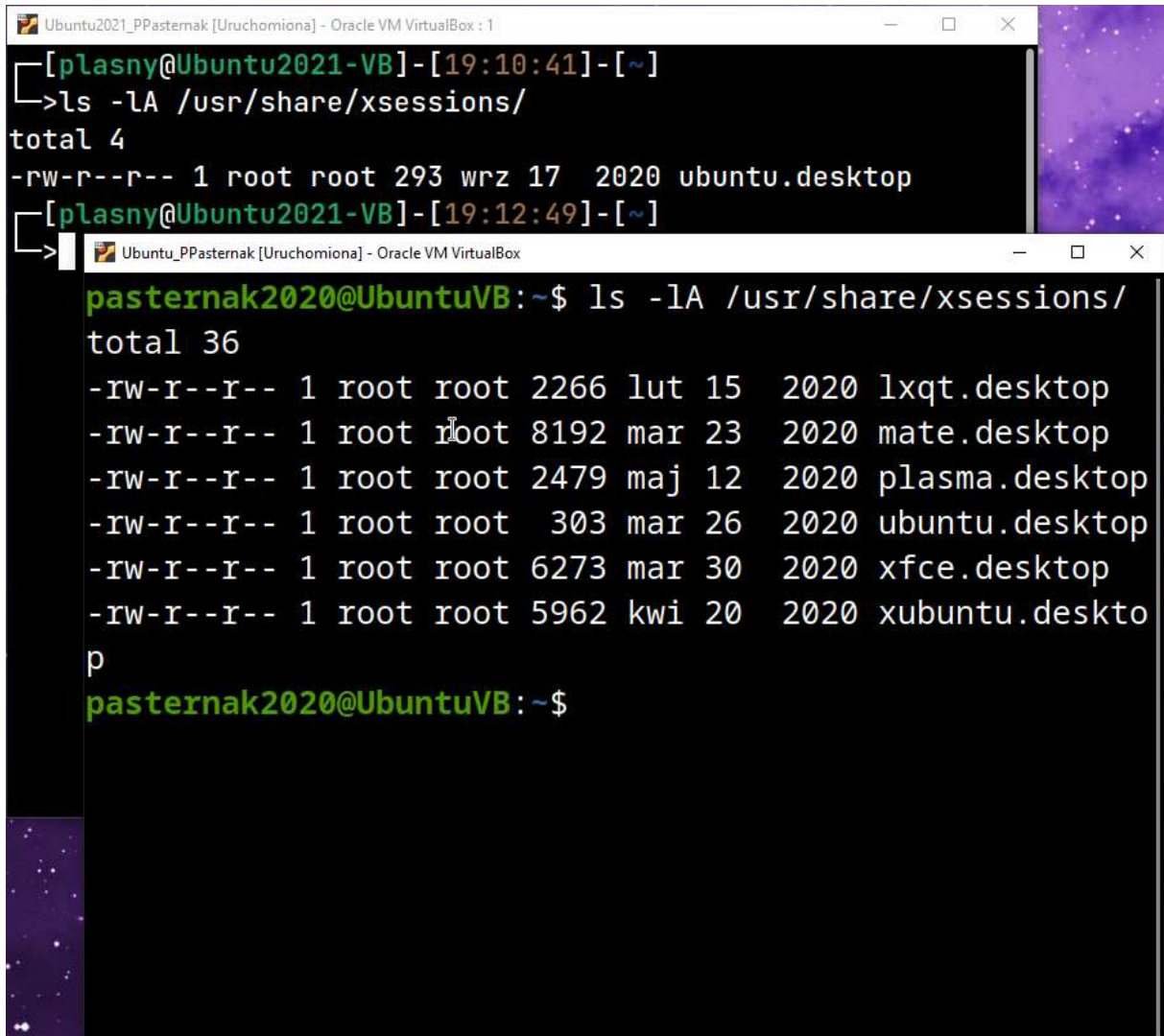
# If GROUPHOMES is "yes", then the home directories will be created as
# /home/groupname/user.
GROUPHOMES=no

# If LETTERHOMES is "yes", then the created home directories will have
# an extra directory - the first letter of the user name. For example:
# /home/u/user.
LETTERHOMES=no

# The SKEL variable specifies the directory containing "skeletal" user
# files; in other words, files such as a sample .profile that will be
# "/etc/adduser.conf" [readonly] 88L, 3028C          1,1          Top
```

- /usr/share/xsessions

W tym folderze znajdują się pliki reprezentujące zainstalowane na naszym systemie środowiska graficzne. Na pierwszej maszynie mam świeżo zainstalowane ubuntu więc znajduje się tam tylko 1 środowisko graficzne, z kolei na drugiej maszynie mam zainstalowane parę różnych środowisk, m.in.: xfce, kde plasma, mate.

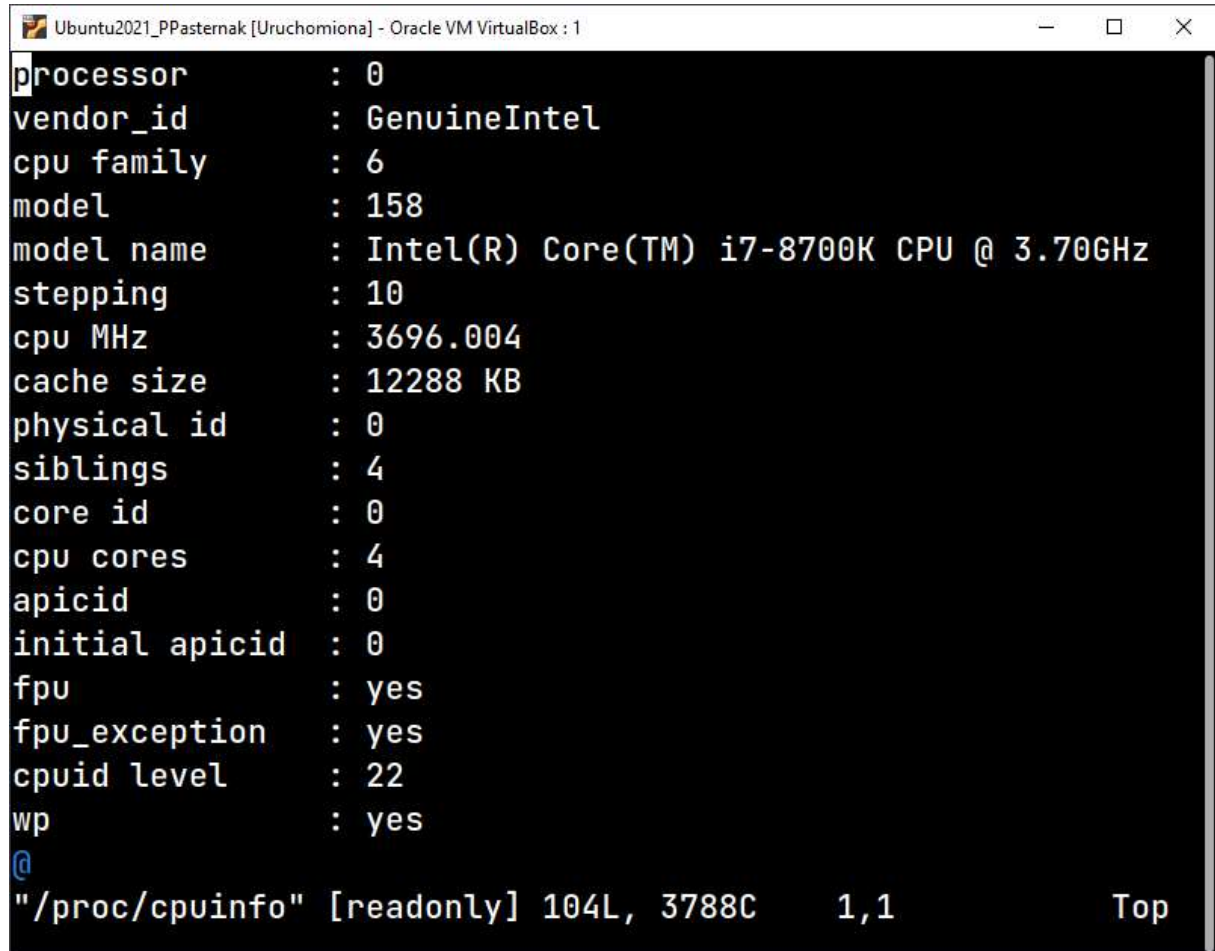


```
Ubuntu2021_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1
[plasnny@Ubuntu2021-VB]-[19:10:41]-[~]
>ls -lA /usr/share/xsessions/
total 4
-rw-r--r-- 1 root root 293 wrz 17 2020 ubuntu.desktop
[plasnny@Ubuntu2021-VB]-[19:12:49]-[~]
>
```

```
Ubuntu_PPasternak [Uruchomiona] - Oracle VM VirtualBox
pasternak2020@UbuntuVB:~$ ls -lA /usr/share/xsessions/
total 36
-rw-r--r-- 1 root root 2266 lut 15 2020 lxqt.desktop
-rw-r--r-- 1 root root 8192 mar 23 2020 mate.desktop
-rw-r--r-- 1 root root 2479 maj 12 2020 plasma.desktop
-rw-r--r-- 1 root root 303 mar 26 2020 ubuntu.desktop
-rw-r--r-- 1 root root 6273 mar 30 2020 xfce.desktop
-rw-r--r-- 1 root root 5962 kwi 20 2020 xubuntu.desktopo
p
pasternak2020@UbuntuVB:~$
```

- /proc/cpuinfo

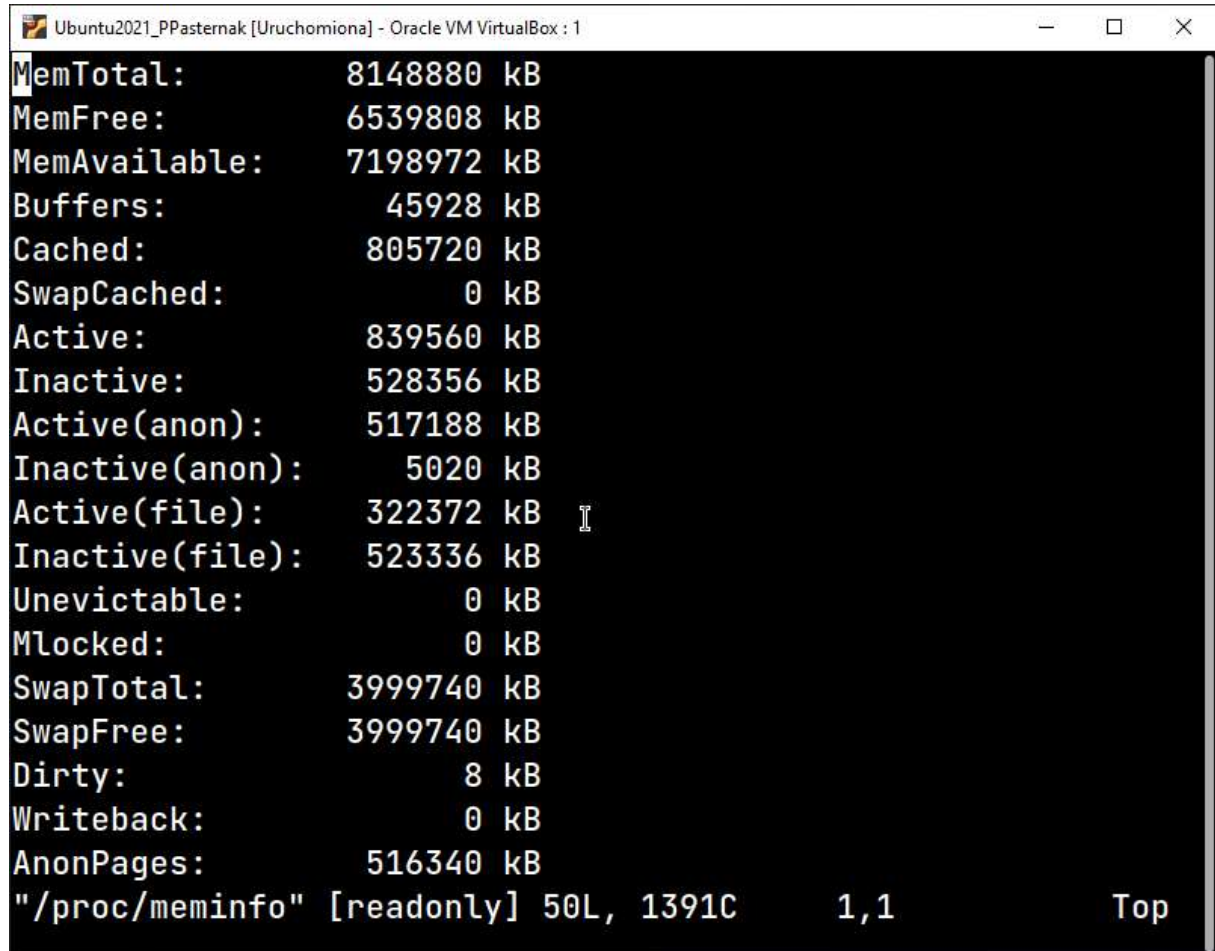
Plik cpuinfo w folderze proc zawiera wszelkie informacje dotyczące zainstalowanych w naszym systemie procesorów. Ich rodziny, nazwy, ilość rdzeni, pamięci, itd.



```
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 158
model name     : Intel(R) Core(TM) i7-8700K CPU @ 3.70GHz
stepping       : 10
cpu MHz        : 3696.004
cache size     : 12288 KB
physical id    : 0
siblings       : 4
core id        : 0
cpu cores      : 4
apicid         : 0
initial apicid : 0
fpu            : yes
fpu_exception  : yes
cpuid level    : 22
wp             : yes
@
"/proc/cpuinfo" [readonly] 104L, 3788C    1,1    Top
```

- /proc/meminfo

Plik meminfo zawiera informacje dotyczące użycia zainstalowanej w naszym systemie pamięci RAM, przestrzeni SWAP, pamięci współdzielonej, a także buforów używanych przez jądro.



The screenshot shows a terminal window titled "Ubuntu2021\_PPasternak [Uruchomiona] - Oracle VM VirtualBox : 1". The terminal displays the output of the command `cat /proc/meminfo`. The output lists various memory statistics in kB, including MemTotal, MemFree, MemAvailable, Buffers, Cached, SwapCached, Active, Inactive, Active(anon), Inactive(anon), Active(file), Inactive(file), Unevictable, Mlocked, SwapTotal, SwapFree, Dirty, Writeback, and AnonPages. At the bottom of the terminal, it shows the command prompt `"/proc/meminfo" [readonly] 50L, 1391C` and the page number `1,1` with a `Top` link.

```
MemTotal:      8148880 kB
MemFree:       6539808 kB
MemAvailable:  7198972 kB
Buffers:       45928 kB
Cached:        805720 kB
SwapCached:      0 kB
Active:        839560 kB
Inactive:      528356 kB
Active(anon):  517188 kB
Inactive(anon): 5020 kB
Active(file):  322372 kB
Inactive(file): 523336 kB
Unevictable:    0 kB
Mlocked:        0 kB
SwapTotal:     3999740 kB
SwapFree:      3999740 kB
Dirty:          8 kB
Writeback:      0 kB
AnonPages:     516340 kB
"/proc/meminfo" [readonly] 50L, 1391C      1,1      Top
```