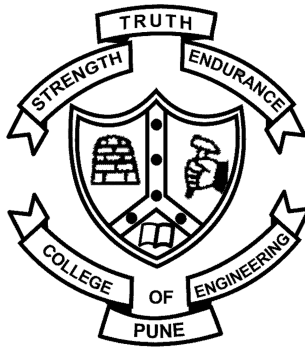


DTL Assignment - Linux Commands

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A terminal window titled "PowerShell" with tabs for "root@DESKTOP-1BGHTLUU: ~" and a dropdown menu. The prompt is "avdhut@142203010 ~ \$". The command "ls | head -n 15" has been executed, resulting in a list of 15 items: 1, 2, 3, 56, 67, bin, bot.py, bot.py~, commands.txt, dsa_sparse, file1, lel.tx~, nvim-linux64 (1).deb, ptls, share, and the prompt "avdhut@142203010 ~ \$".

```
avdhut@142203010 ~ $ ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dsa_sparse
file1
lel.tx~
nvim-linux64 (1).deb
ptls
share
avdhut@142203010 ~ $
```

Figure 1: "ls" command

A terminal window titled "PowerShell" with tabs for "root@DESKTOP-1BGHTLUU: ~" and a dropdown menu. The prompt is "avdhut@142203010 ~ \$". The command "ls -F | head -n 15" has been executed, resulting in a list of 15 items with file type indicators: 1/, 2/, 3/, 56, 67, bin/, bot.py*, bot.py~*, commands.txt*, dsa_sparse/, file1, lel.tx~*, nvim-linux64 (1).deb*, ptls/, share/, and the prompt "avdhut@142203010 ~ \$".

```
avdhut@142203010 ~ $ ls -F | head -n 15
1/
2/
3/
56
67
bin/
bot.py*
bot.py~*
commands.txt*
dsa_sparse/
file1
lel.tx~*
nvim-linux64 (1).deb*
ptls/
share/
avdhut@142203010 ~ $
```

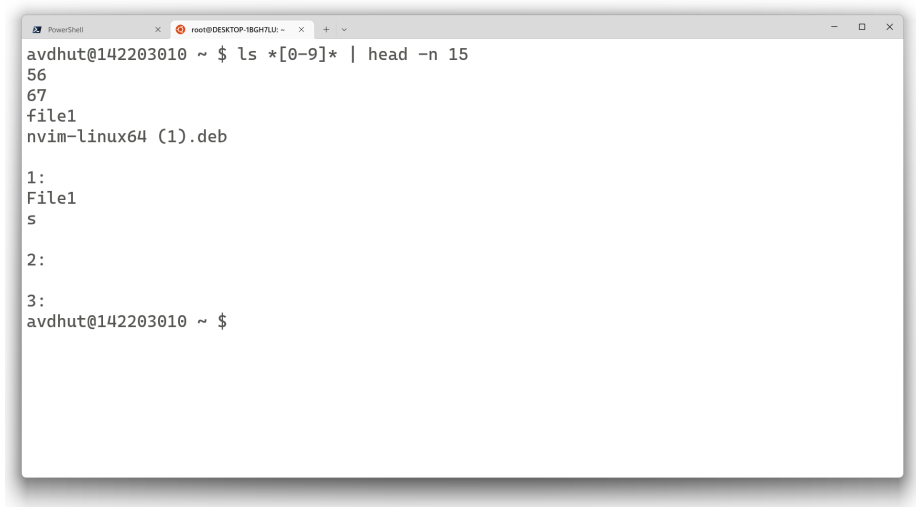
Figure 2: "ls -F" command

```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ ls -l | head -n 15
total 10268
drwxr-xr-x 3 root root 4096 Jan 13 13:12 1
drwxr-xr-x 2 root root 4096 Jan 13 13:04 2
drwxr-xr-x 2 root root 4096 Jan 13 13:04 3
-rw-r--r-- 1 root root 0 Jan 13 13:04 56
-rw-r--r-- 1 root root 0 Jan 13 13:04 67
drwxr-xr-x 2 root root 4096 Jan 13 12:13 bin
-rwxrwxrwx 1 root root 566 Jan 13 12:53 bot.py
-rwxrwxrwx 1 root root 566 Jan 13 12:53 bot.py~
-rwxr-xr-x 1 root root 699 Jan 13 13:48 commands.txt
drwxr-xr-x 3 root root 4096 Jan 13 13:50 dsa_sparse
-rw-r--r-- 1 root root 0 Dec 25 2007 file1
-rwxrwxrwx 1 root root 534 Jan 13 12:31 lel.tx~
-rwxrwxrwx 1 root root 10466072 Jan 13 12:17 nvim-linux64 (1).deb
drwxr-xr-x 4 root root 4096 Jan 13 12:14 ptls
avdhut@142203010 ~ $
```

Figure 3: "ls -l" command

```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ ls -a | head -n 15
.
..
.bash_history
.bashrc
.bashrc~
.cache
.config
.fonts
.lesshst
.local
.motd_shown
.profile
.viminfo
1
2
avdhut@142203010 ~ $
```

Figure 4: "ls -a" command



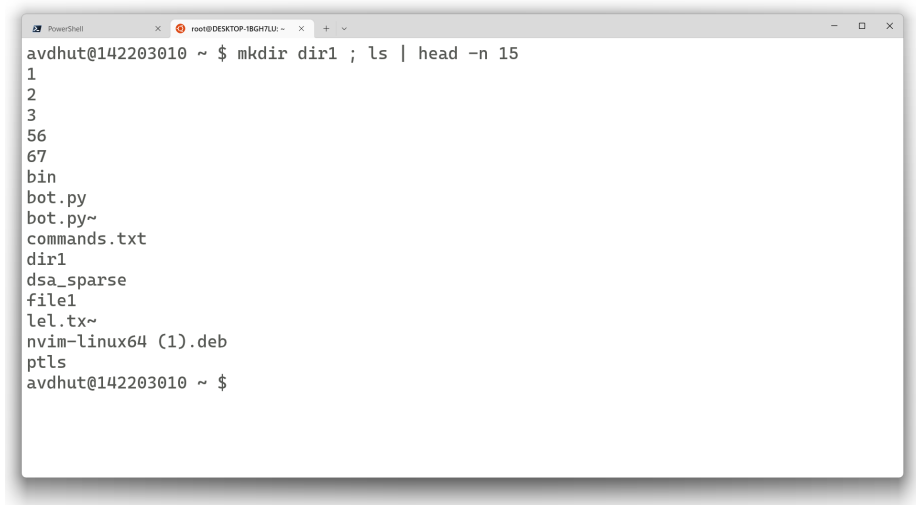
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ ls *[0-9]* | head -n 15
56
67
file1
nvim-linux64 (1).deb

1:
File1
s

2:

3:
avdhut@142203010 ~ $
```

Figure 5: "ls *[0-9]*" command



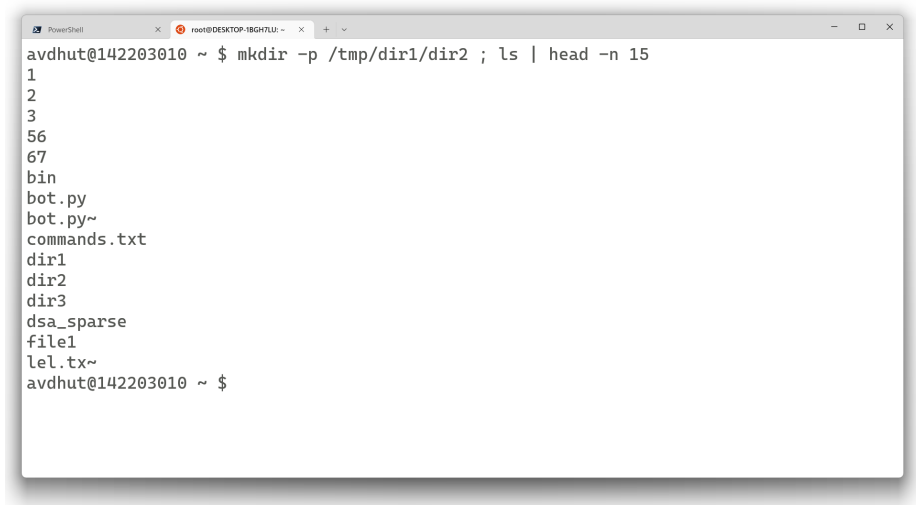
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ mkdir dir1 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dsa_sparse
file1
lel.tx~
nvim-linux64 (1).deb
ptls
avdhut@142203010 ~ $
```

Figure 6: "mkdir dir1 ; ls" command



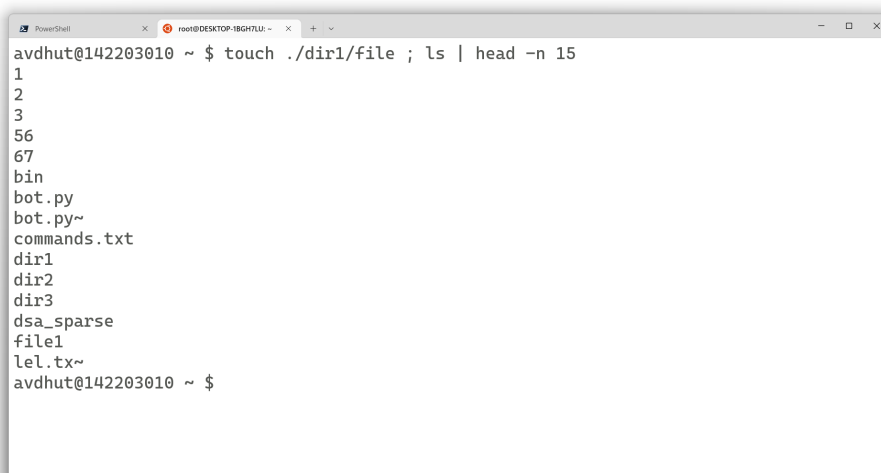
```
PowerShell
root@DESKTOP-1BGHTLUU: ~
avdhut@142203010 ~ $ mkdir dir2 dir3 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dir2
dir3
dsa_sparse
file1
lel.tx~
avdhut@142203010 ~ $
```

Figure 7: "mkdir dir2 dir3 ; ls" command



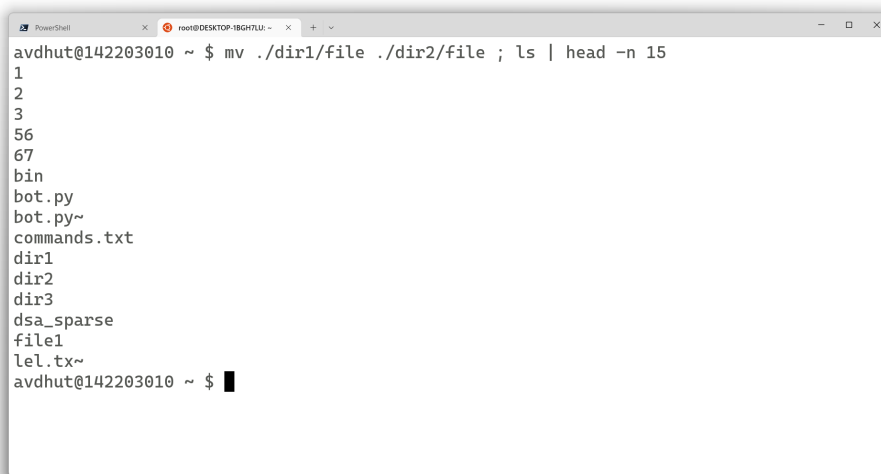
```
PowerShell
root@DESKTOP-1BGHTLUU: ~
avdhut@142203010 ~ $ mkdir -p /tmp/dir1/dir2 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dir2
dir3
dsa_sparse
file1
lel.tx~
avdhut@142203010 ~ $
```

Figure 8: "mkdir -p /tmp/dir1/dir2 ; ls" command



```
PowerShell
root@DESKTOP-1BGH7LUI: ~
avdhut@142203010 ~ $ touch ./dir1/file ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dir2
dir3
dsa_sparse
file1
lel.tx~
avdhut@142203010 ~ $
```

Figure 9: "touch ./dir1/file ; ls" command



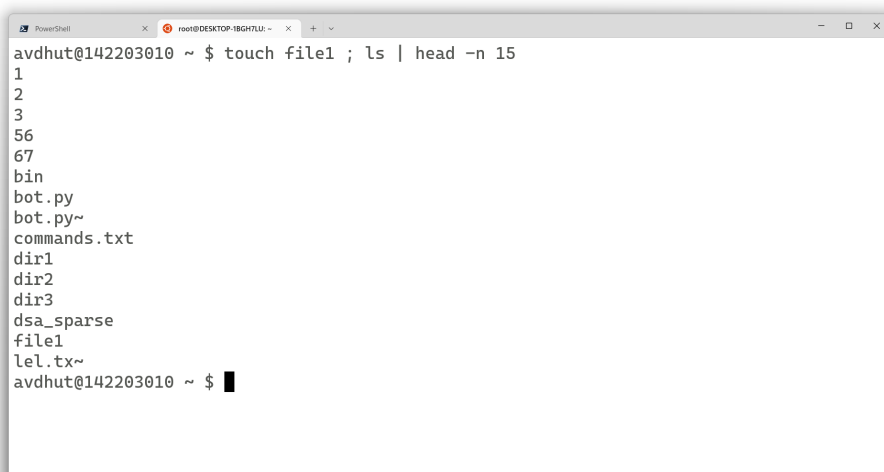
```
PowerShell
root@DESKTOP-1BGH7LUI: ~
avdhut@142203010 ~ $ mv ./dir1/file ./dir2/file ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dir2
dir3
dsa_sparse
file1
lel.tx~
avdhut@142203010 ~ $ █
```

Figure 10: "mv ./dir1/file ./dir2/file ; ls" command

A screenshot of a PowerShell terminal window. The window has a title bar with 'PowerShell' and several tabs. The active tab is 'root@DESKTOP-1BGHTLU: ~'. The terminal shows the command 'pwd | head -n 15' being executed, and the output is '/root'. The prompt 'avdhut@142203010 ~ \$' is visible at the bottom.

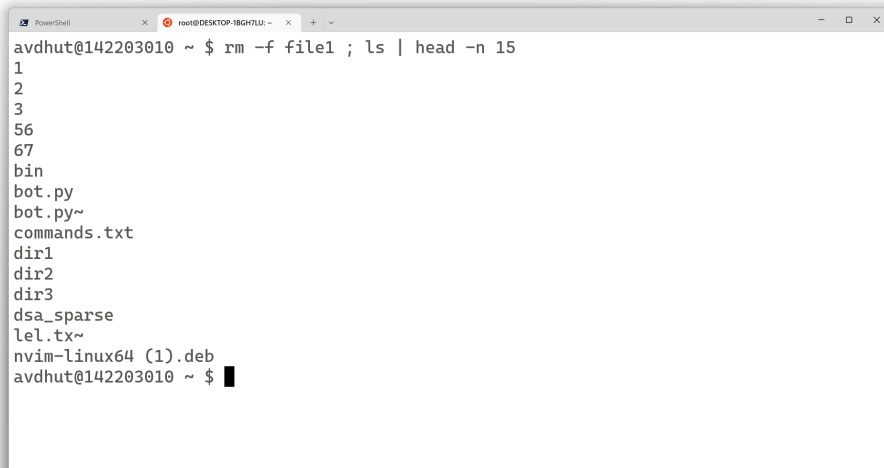
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ pwd | head -n 15
/root
avdhut@142203010 ~ $
```

Figure 11: "pwd" command

A screenshot of a PowerShell terminal window. The window has a title bar with 'PowerShell' and several tabs. The active tab is 'root@DESKTOP-1BGHTLU: ~'. The terminal shows the command 'touch file1 ; ls | head -n 15' being executed. The output lists the contents of the current directory: '1', '2', '3', '56', '67', 'bin', 'bot.py', 'bot.py~', 'commands.txt', 'dir1', 'dir2', 'dir3', 'dsa_sparse', 'file1', and 'lel.tx~'. The prompt 'avdhut@142203010 ~ \$' is visible at the bottom.

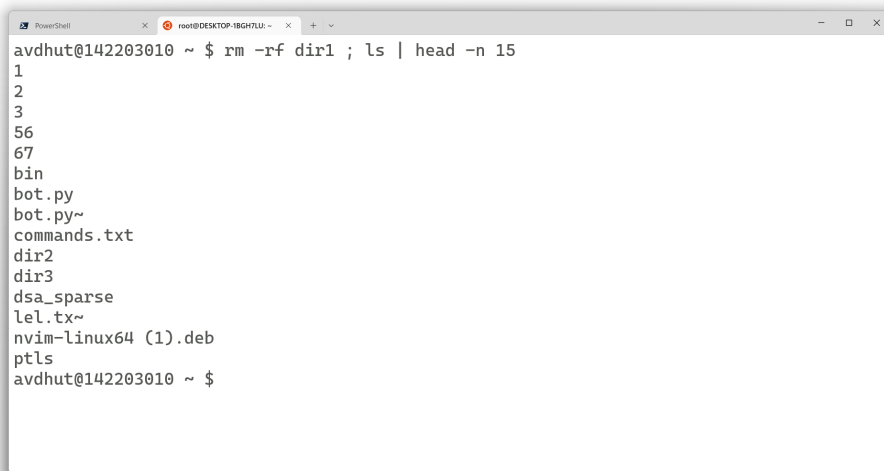
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ touch file1 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dir2
dir3
dsa_sparse
file1
lel.tx~
avdhut@142203010 ~ $
```

Figure 12: "touch file1 ; ls" command



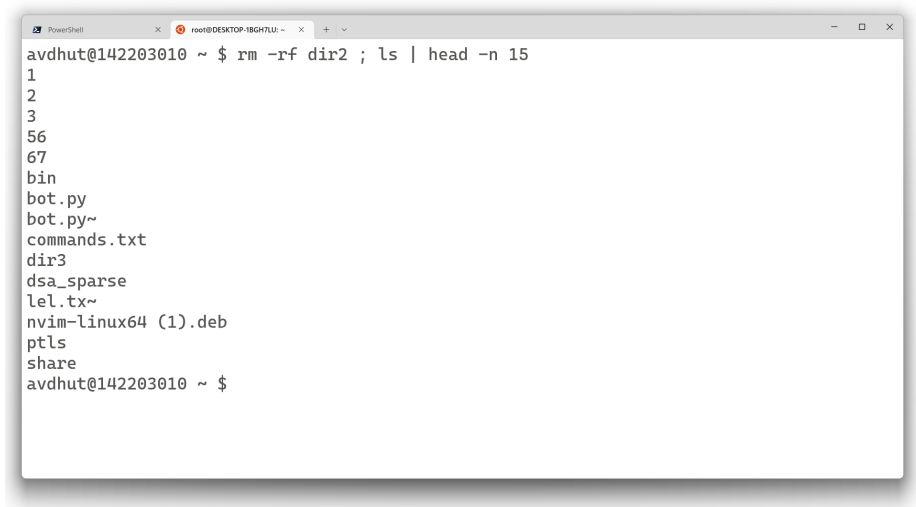
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ rm -f file1 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir1
dir2
dir3
dsa_sparse
lel.tx~
nvim-linux64 (1).deb
avdhut@142203010 ~ $
```

Figure 13: "rm -f file1 ; ls" command



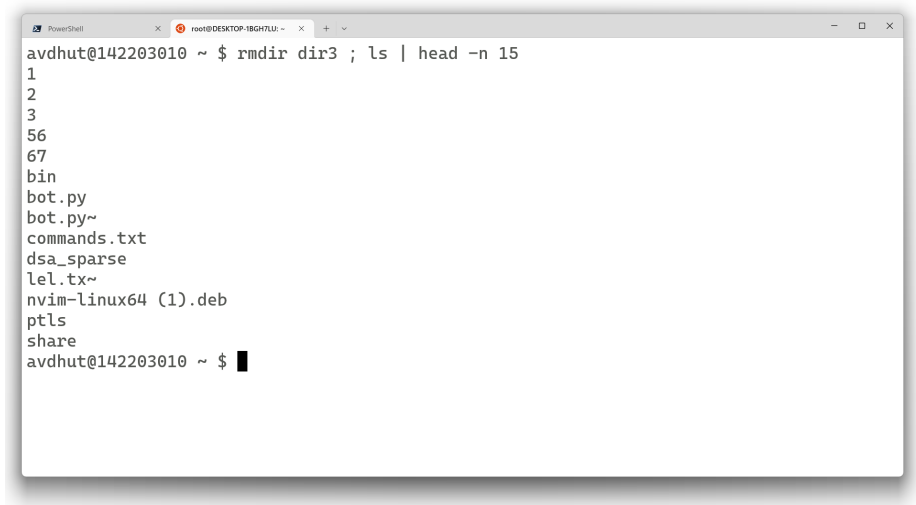
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ rm -rf dir1 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir2
dir3
dsa_sparse
lel.tx~
nvim-linux64 (1).deb
ptls
avdhut@142203010 ~ $
```

Figure 14: "rm -rf dir1 ; ls" command

A terminal window titled 'PowerShell' with a tab for 'root@DESKTOP-1BGHTLUU: ~'. The prompt is 'avdhut@142203010 ~ \$'. The command entered is 'rm -rf dir2 ; ls | head -n 15'. The output lists 15 items: 1, 2, 3, 56, 67, bin, bot.py, bot.py~, commands.txt, dir3, dsa_sparse, lel.tx~, nvim-linux64 (1).deb, ptls, share, and the prompt 'avdhut@142203010 ~ \$' again.

```
avdhut@142203010 ~ $ rm -rf dir2 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dir3
dsa_sparse
lel.tx~
nvim-linux64 (1).deb
ptls
share
avdhut@142203010 ~ $
```

Figure 15: "rm -rf dir2 ; ls" command

A terminal window titled 'PowerShell' with a tab for 'root@DESKTOP-1BGHTLUU: ~'. The prompt is 'avdhut@142203010 ~ \$'. The command entered is 'rmdir dir3 ; ls | head -n 15'. The output lists 15 items: 1, 2, 3, 56, 67, bin, bot.py, bot.py~, commands.txt, dsa_sparse, lel.tx~, nvim-linux64 (1).deb, ptls, share, and the prompt 'avdhut@142203010 ~ \$' again. The item 'dir3' is no longer present in the list.

```
avdhut@142203010 ~ $ rmdir dir3 ; ls | head -n 15
1
2
3
56
67
bin
bot.py
bot.py~
commands.txt
dsa_sparse
lel.tx~
nvim-linux64 (1).deb
ptls
share
avdhut@142203010 ~ $ █
```

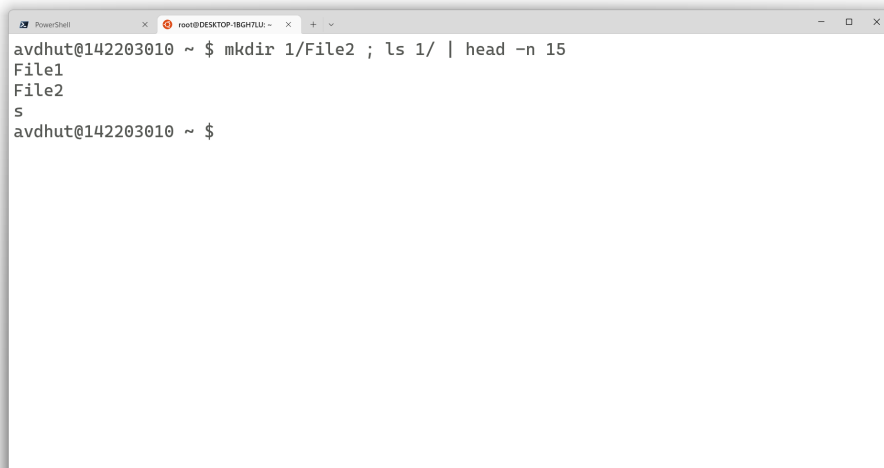
Figure 16: "rmdir dir3 ; ls" command

```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ touch -t 0712250000 file1 ; ll | head -n 15
total 10324
drwx----- 13 root root      4096 Jan 13 14:58 ./
drwxr-xr-x 19 root root      4096 Jan 13 12:09 ../
-rw----- 1 root root     7243 Jan 13 14:49 .bash_history
-rw-r--r-- 1 root root     2908 Jan 13 14:49 .bashrc
-rw-r--r-- 1 root root     3068 Jan 13 14:40 .bashrc~
drwx----- 4 root root      4096 Jan 13 12:39 .cache/
drwx----- 5 root root      4096 Jan  8 16:48 .config/
drwxr-xr-x 2 root root      4096 Dec 10 20:52 .fonts/
-rw----- 1 root root         20 Jan  7 22:37 .lessht
drwx----- 4 root root      4096 Jan 13 12:19 .local/
-rw-r--r-- 1 root root         0 Jan  8 16:45 .motd_shown
-rw-r--r-- 1 root root       161 Jul  9 2019 .profile
-rw----- 1 root root     4246 Jan 13 14:49 .viminfo
drwxr-xr-x 3 root root      4096 Jan 13 13:12 1/
avdhut@142203010 ~ $ █
```

Figure 17: "touch -t 0712250000 file1 ; ll" command

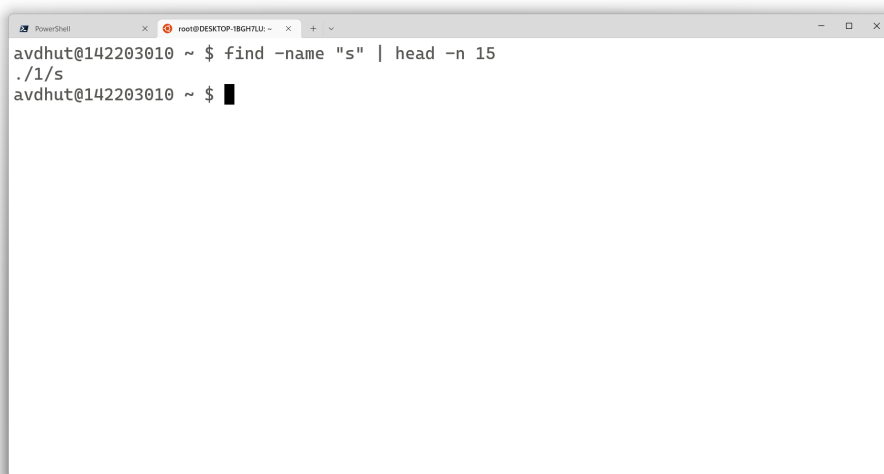
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ tree | head -n 15
.
├── 1
│   ├── File1
│   └── s
├── 2
├── 3
├── 56
├── 67
├── bin
├── bot.py
├── bot.py~
├── commands.txt
├── dsa_sparse
│   ├── a.exe
│   └── a.out
avdhut@142203010 ~ $ █
```

Figure 18: "tree" command



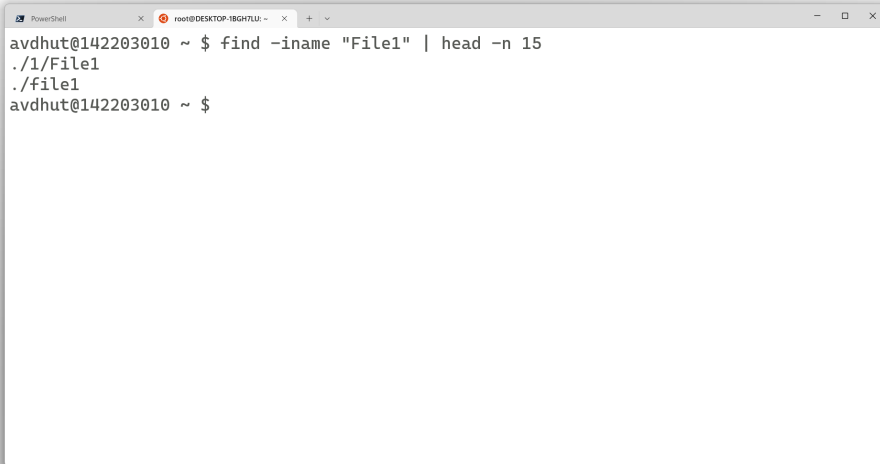
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ mkdir 1/File2 ; ls 1/ | head -n 15
File1
File2
s
avdhut@142203010 ~ $
```

Figure 19: "mkdir 1/File2 ; ls 1/" command



```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ find -name "s" | head -n 15
./1/s
avdhut@142203010 ~ $
```

Figure 20: "find -name "s"" command



```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ find -iname "File1" | head -n 15
./1/File1
./file1
avdhut@142203010 ~ $
```

Figure 21: "find -iname "File1"" command



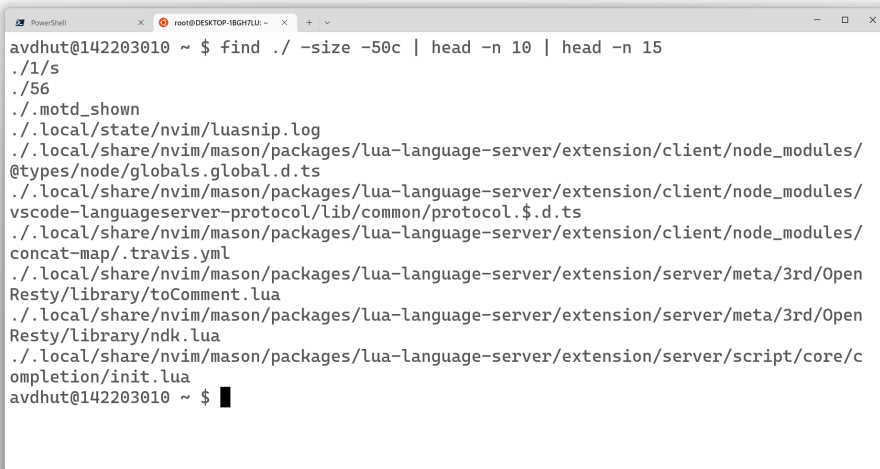
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ find ./ -type f -name "*.conf" | head -n 15
./local/share/nvim/site/pack/packer/start/nvim-treesitter/tests/query/highlights/hoc
on/test.conf
./dsa_sparse/dotfiles/.config/kitty/kitty.conf
./dsa_sparse/dotfiles/.config/kitty/colors.conf
./dsa_sparse/dotfiles/.config/ranger/rifle.conf
./dsa_sparse/dotfiles/.config/ranger/rc.conf
./dsa_sparse/dotfiles/.config/sway/config.d/90-enable-gtk-theme.conf
./dsa_sparse/dotfiles/.config/sway/config.d/50-systemd-user.conf
./dsa_sparse/dotfiles/.config/sway/config.d/99-autostart-applications.conf
./dsa_sparse/dotfiles/.config/sway/config.d/98-application-defaults.conf
./dsa_sparse/dotfiles/.config/sway/config.d/96-waybar-config.conf
./dsa_sparse/dotfiles/.config/sway/config.d/95-generate-help.conf
./dsa_sparse/dotfiles/.config/etc_sway/sway/config.d/90-enable-gtk-theme.conf
./dsa_sparse/dotfiles/.config/etc_sway/sway/config.d/50-systemd-user.conf
./dsa_sparse/dotfiles/.config/etc_sway/sway/config.d/99-autostart-applications.conf
./dsa_sparse/dotfiles/.config/etc_sway/sway/config.d/98-application-defaults.conf
avdhut@142203010 ~ $
```

Figure 22: "find ./ -type f -name "*.conf"" command



```
PowerShell
root@DESKTOP-1BGH7LUI ~
avdhut@142203010 ~ $ find ./ -size 50c | head -n 15
./local/share/nvim/site/pack/packer/start/phpactor/requirements.txt
./local/share/nvim/site/pack/packer/start/nvim-treesitter/tests/indent/lua/comment.lua
./local/share/nvim/site/pack/packer/start/nvim-treesitter/queries/tiger/injections.scmm
./config/nvim/after/plugin/lal.py
avdhut@142203010 ~ $
```

Figure 23: "find ./ -size 50c" command



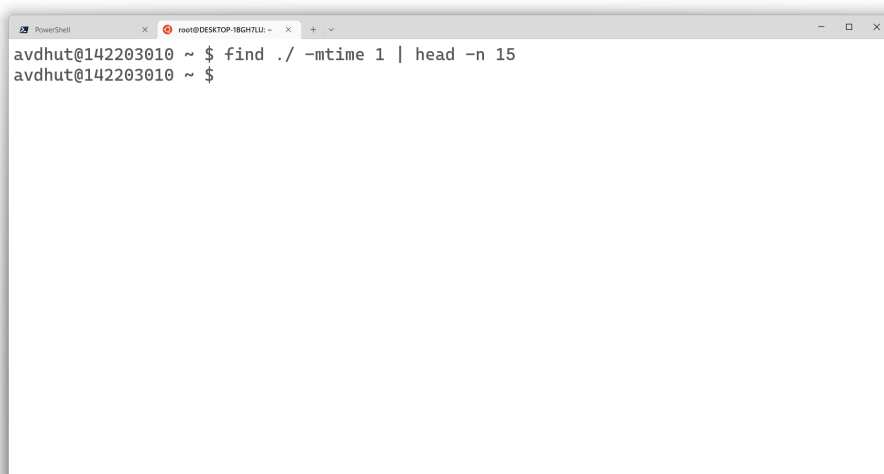
```
PowerShell
root@DESKTOP-1BGH7LUI ~
avdhut@142203010 ~ $ find ./ -size -50c | head -n 10 | head -n 15
./1/s
./56
./motd_shown
./local/state/nvim/luasnip.log
./local/share/nvim/mason/packages/lua-language-server/extension/client/node_modules/@types/node/globals.global.d.ts
./local/share/nvim/mason/packages/lua-language-server/extension/client/node_modules/vscode-languageserver-protocol/lib/common/protocol.d.ts
./local/share/nvim/mason/packages/lua-language-server/extension/client/node_modules/concat-map/.travis.yml
./local/share/nvim/mason/packages/lua-language-server/extension/server/meta/3rd/OpenResty/library/toComment.lua
./local/share/nvim/mason/packages/lua-language-server/extension/server/meta/3rd/OpenResty/library/ndk.lua
./local/share/nvim/mason/packages/lua-language-server/extension/server/script/core/completion/init.lua
avdhut@142203010 ~ $
```

Figure 24: "find ./ -size -50c — head -n 10" command

A terminal window titled "PowerShell" with a tab labeled "root@DESKTOP-1BGH7LU: ~". The prompt is "avdhut@142203010 ~". The command "find ./ -size +700M | head -n 15" is entered on the first line, and the prompt "avdhut@142203010 ~ \$" is on the second line.

```
PowerShell
root@DESKTOP-1BGH7LU: ~
avdhut@142203010 ~ $ find ./ -size +700M | head -n 15
avdhut@142203010 ~ $
```

Figure 25: "find ./ -size +700M" command

A terminal window titled "PowerShell" with a tab labeled "root@DESKTOP-1BGH7LU: ~". The prompt is "avdhut@142203010 ~". The command "find ./ -mtime 1 | head -n 15" is entered on the first line, and the prompt "avdhut@142203010 ~ \$" is on the second line.

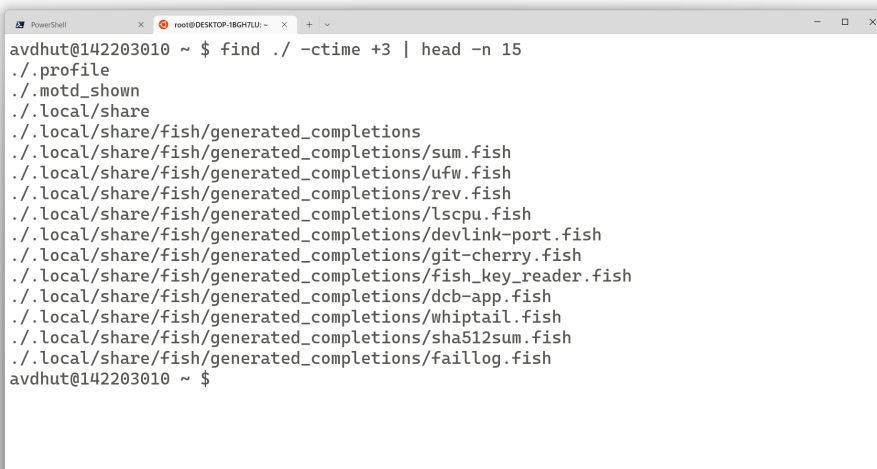
```
PowerShell
root@DESKTOP-1BGH7LU: ~
avdhut@142203010 ~ $ find ./ -mtime 1 | head -n 15
avdhut@142203010 ~ $
```

Figure 26: "find ./ -mtime 1" command



```
PowerShell
root@DESKTOP-1BGH7LU: ~
avdhut@142203010 ~ $ find ./ -atime -1 | head -n 15
./
./2
./.bashrc
./1
./1/File2
./1/File1
./1/s
./bot.py
./56
./bin
./commands.txt
./.bashrc~
./.local
./.local/state
./.local/state/nvim
avdhut@142203010 ~ $
```

Figure 27: "find ./ -atime -1" command



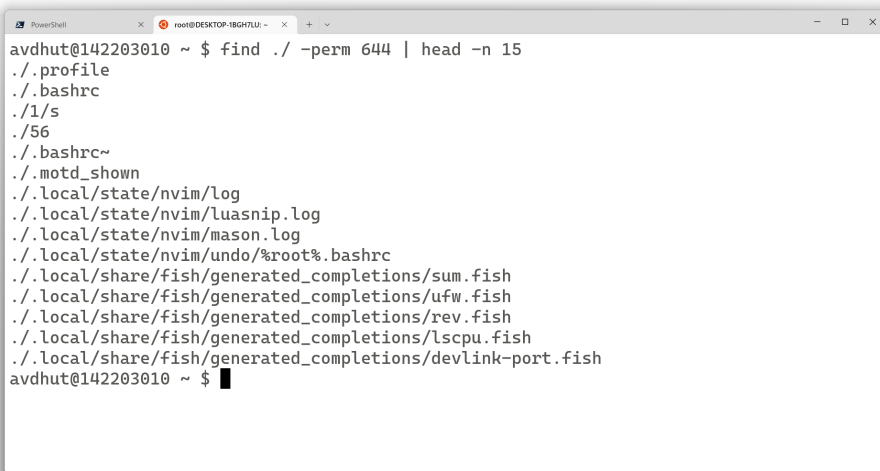
```
PowerShell
root@DESKTOP-1BGH7LU: ~
avdhut@142203010 ~ $ find ./ -ctime +3 | head -n 15
./profile
./motd_shown
./local/share
./local/share/fish/generated_completions
./local/share/fish/generated_completions/sum.fish
./local/share/fish/generated_completions/uw.fish
./local/share/fish/generated_completions/rev.fish
./local/share/fish/generated_completions/lscpu.fish
./local/share/fish/generated_completions/devlink-port.fish
./local/share/fish/generated_completions/git-cherry.fish
./local/share/fish/generated_completions/fish_key_reader.fish
./local/share/fish/generated_completions/dcb-app.fish
./local/share/fish/generated_completions/whiptail.fish
./local/share/fish/generated_completions/sha512sum.fish
./local/share/fish/generated_completions/faillog.fish
avdhut@142203010 ~ $
```

Figure 28: "find ./ -ctime +3" command



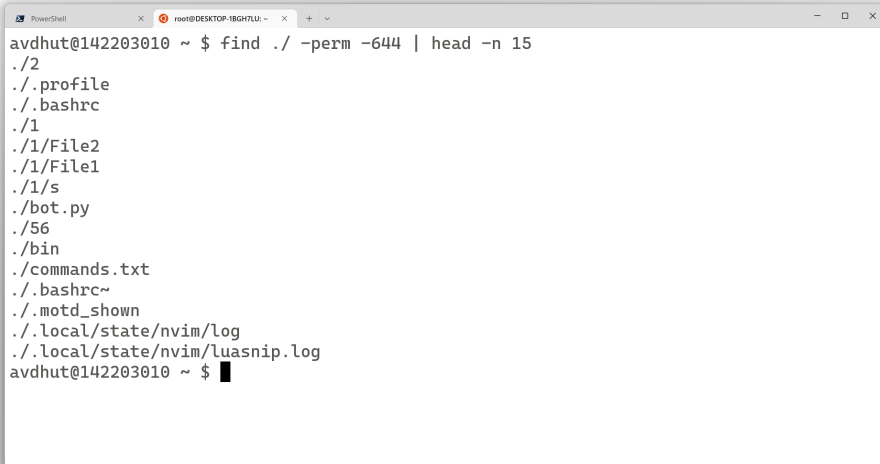
```
PowerShell
root@DESKTOP-1BGH7LU: ~
avdhut@142203010 ~ $ find ./ -mmin -1 | head -n 15
./
./1
./1/File2
avdhut@142203010 ~ $
```

Figure 29: "find ./ -mmin -1" command



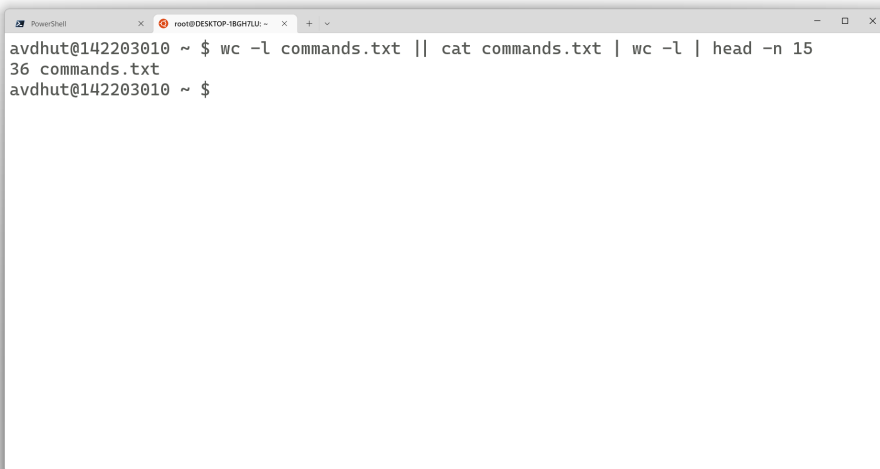
```
PowerShell
root@DESKTOP-1BGH7LU: ~
avdhut@142203010 ~ $ find ./ -perm 644 | head -n 15
././profile
././bashrc
./1/s
./56
././bashrc~
././motd_shown
././local/state/nvim/log
././local/state/nvim/luasnip.log
././local/state/nvim/mason.log
././local/state/nvim/undo/%root%.bashrc
././local/share/fish/generated_completions/sum.fish
././local/share/fish/generated_completions/uw.fish
././local/share/fish/generated_completions/rev.fish
././local/share/fish/generated_completions/lscpu.fish
././local/share/fish/generated_completions/devlink-port.fish
avdhut@142203010 ~ $
```

Figure 30: "find ./ -perm 644" command



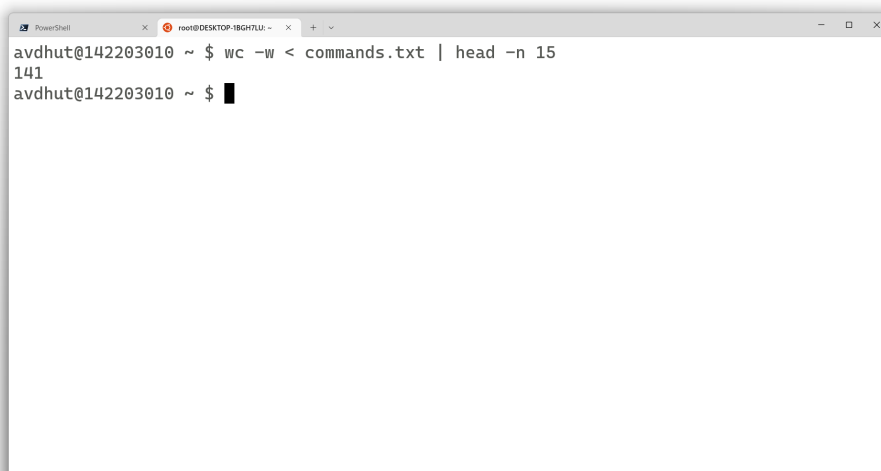
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ find ./ -perm -644 | head -n 15
./2
./.profile
./.bashrc
./1
./1/File2
./1/File1
./1/s
./bot.py
./56
./bin
./commands.txt
./.bashrc~
./.motd_shown
./.local/state/nvim/log
./.local/state/nvim/luasnip.log
avdhut@142203010 ~ $
```

Figure 31: "find ./ -perm -644" command



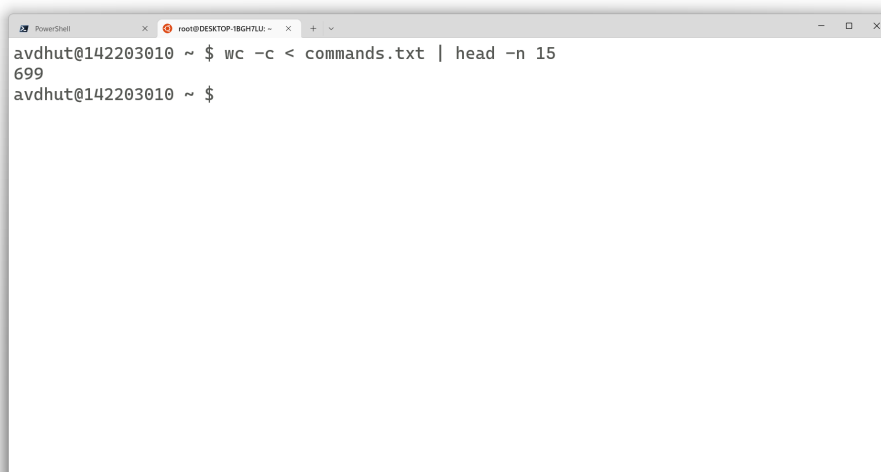
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ wc -l commands.txt || cat commands.txt | wc -l | head -n 15
36 commands.txt
avdhut@142203010 ~ $
```

Figure 32: "wc -l commands.txt — cat commands.txt — wc -l" command



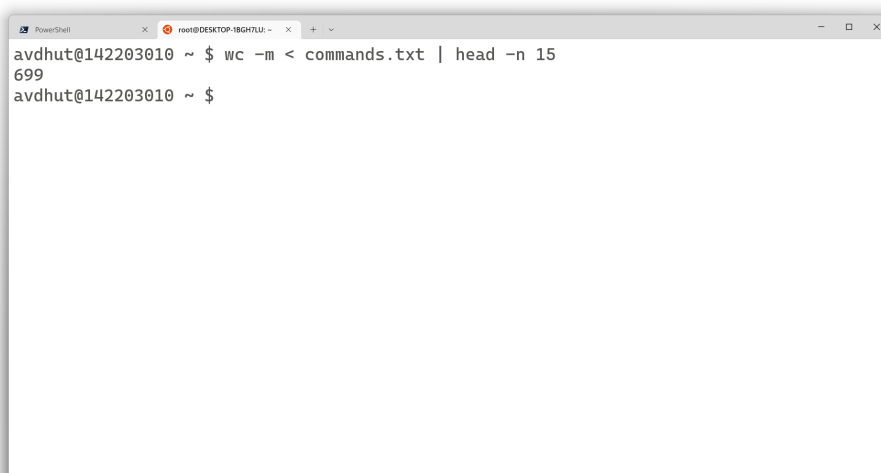
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ wc -w < commands.txt | head -n 15
141
avdhut@142203010 ~ $
```

Figure 33: "wc -w ; commands.txt" command



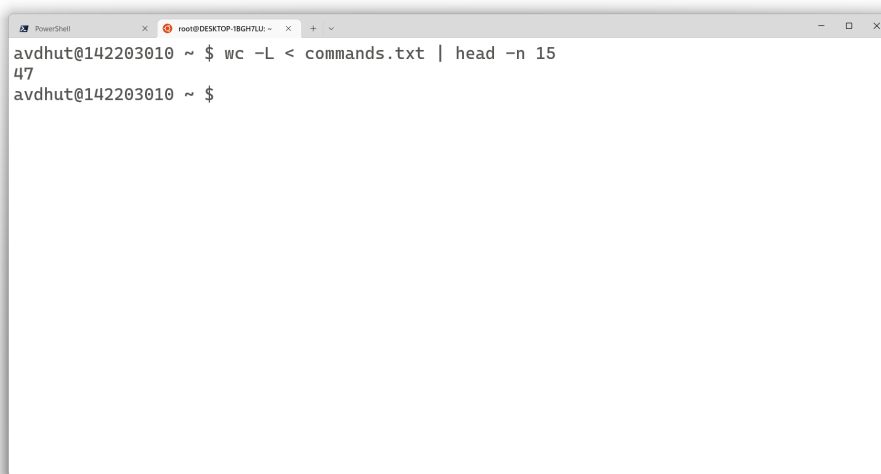
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ wc -c < commands.txt | head -n 15
699
avdhut@142203010 ~ $
```

Figure 34: "wc -c ; commands.txt" command




```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ wc -m < commands.txt | head -n 15
699
avdhut@142203010 ~ $
```

Figure 35: "wc -m ; commands.txt" command



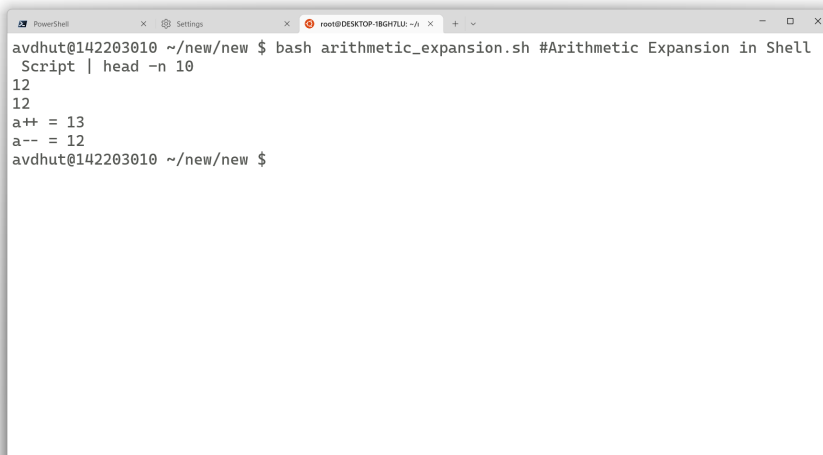
```
PowerShell
root@DESKTOP-1BGHTLU: ~
avdhut@142203010 ~ $ wc -L < commands.txt | head -n 15
47
avdhut@142203010 ~ $
```

Figure 36: "wc -L ; commands.txt" command



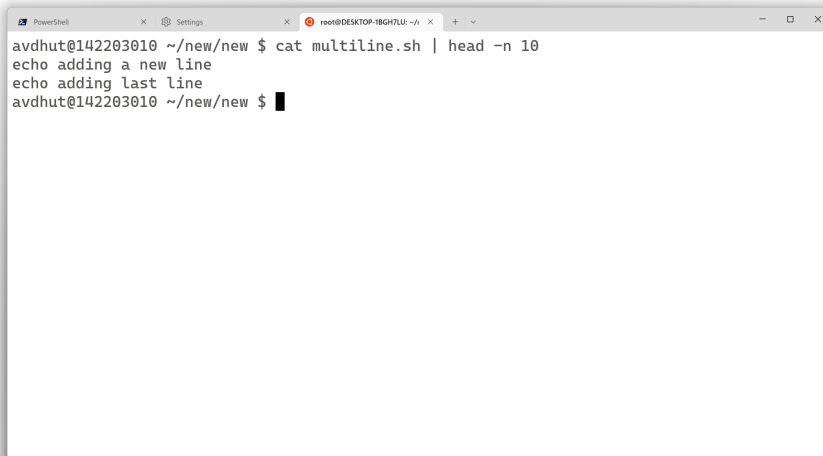
```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~\h x + v
avdhut@142203010 ~/new/new $ cat arithmetic_expansion.sh | head -n 10
#!/bin/bash
a=4
b=8
echo $((a = a+b))
echo $a
((a++))
echo a++ = $a
((a--))
echo a-- = $a
avdhut@142203010 ~/new/new $
```

Figure 37: "cat arithmeticexpansion.sh" command



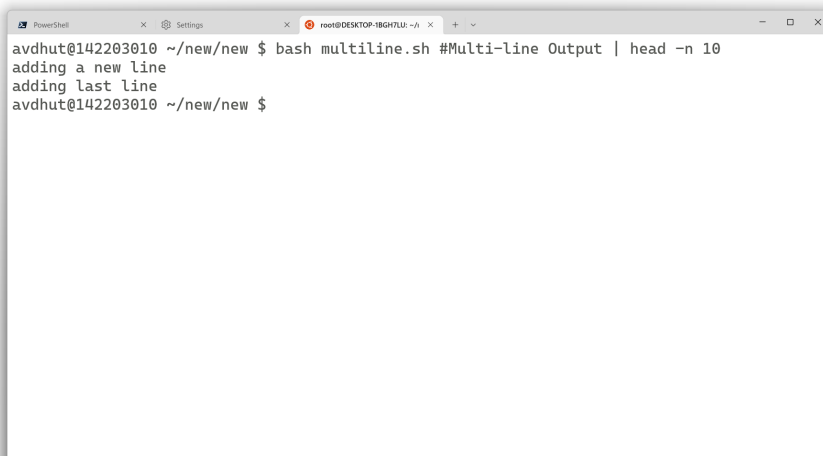
```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~\h x + v
avdhut@142203010 ~/new/new $ bash arithmetic_expansion.sh #Arithmetic Expansion in Shell
Script | head -n 10
12
12
a++ = 13
a-- = 12
avdhut@142203010 ~/new/new $
```

Figure 38: "bash arithmeticexpansion.sh Arithmetic Expansion in Shell Script" command



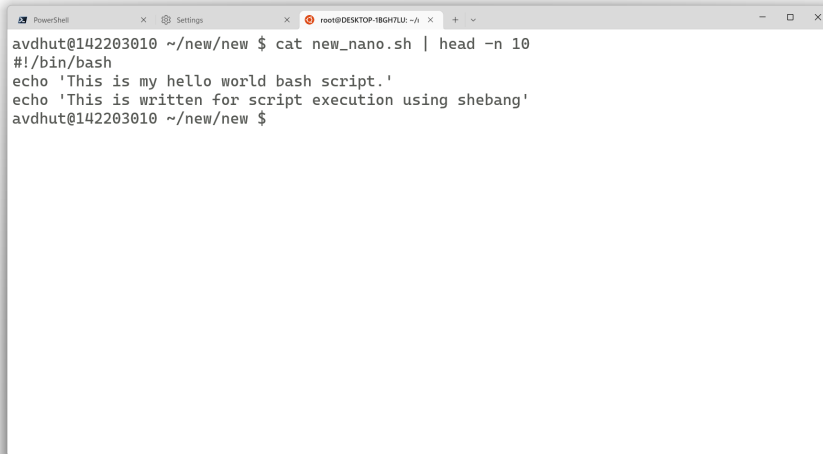
```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~/n x + v
avdhut@142203010 ~/new/new $ cat multiline.sh | head -n 10
echo adding a new line
echo adding last line
avdhut@142203010 ~/new/new $
```

Figure 39: "cat multiline.sh" command



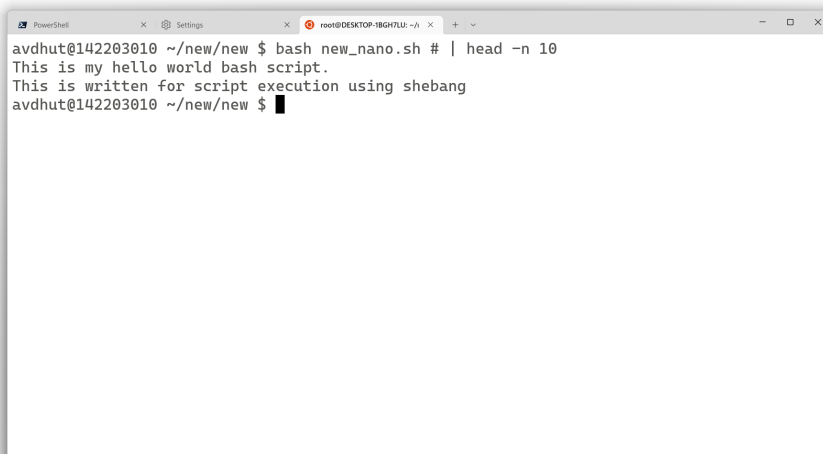
```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~/n x + v
avdhut@142203010 ~/new/new $ bash multiline.sh #Multi-line Output | head -n 10
adding a new line
adding last line
avdhut@142203010 ~/new/new $
```

Figure 40: "bash multiline.sh Multi-line Output" command



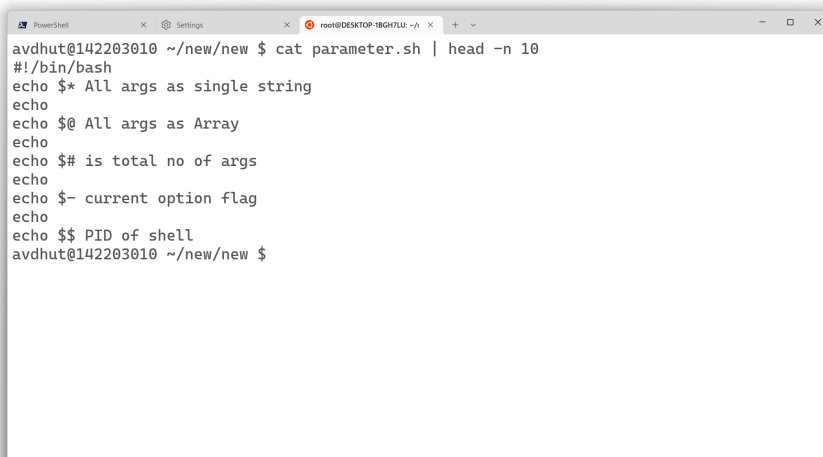
```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~/A x + v
avdhut@142203010 ~/new/new $ cat newnano.sh | head -n 10
#!/bin/bash
echo 'This is my hello world bash script.'
echo 'This is written for script execution using shebang'
avdhut@142203010 ~/new/new $
```

Figure 41: "cat newnano.sh" command



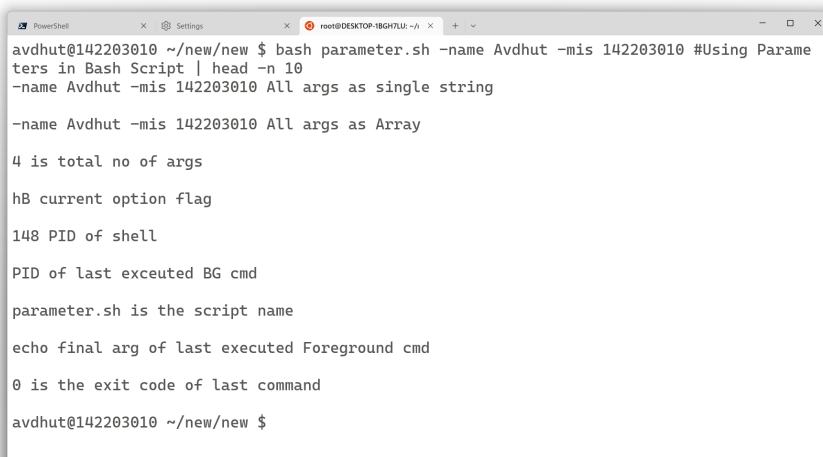
```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~/A x + v
avdhut@142203010 ~/new/new $ bash newnano.sh # | head -n 10
This is my hello world bash script.
This is written for script execution using shebang
avdhut@142203010 ~/new/new $ █
```

Figure 42: "bash newnano.sh " command



```
PowerShell
avdhut@142203010 ~/new/new $ cat parameter.sh | head -n 10
#!/bin/bash
echo $* All args as single string
echo
echo $@ All args as Array
echo
echo $# is total no of args
echo
echo $- current option flag
echo
echo $$ PID of shell
avdhut@142203010 ~/new/new $
```

Figure 43: "cat parameter.sh" command



```
PowerShell
avdhut@142203010 ~/new/new $ bash parameter.sh -name Avdhut -mis 142203010 #Using Parameters in Bash Script | head -n 10
-name Avdhut -mis 142203010 All args as single string

-name Avdhut -mis 142203010 All args as Array

4 is total no of args

hB current option flag

148 PID of shell

PID of last executed BG cmd

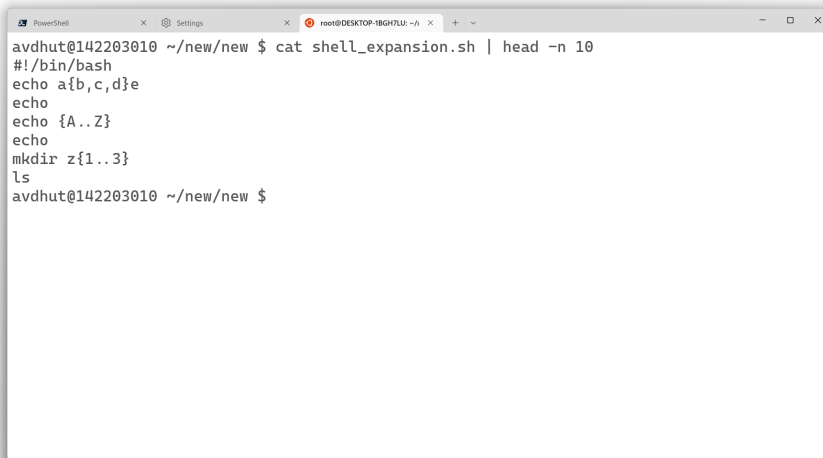
parameter.sh is the script name

echo final arg of last executed Foreground cmd

0 is the exit code of last command

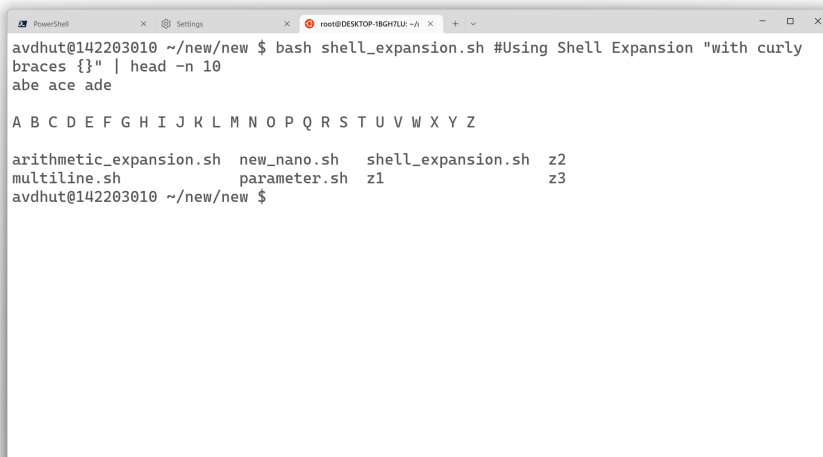
avdhut@142203010 ~/new/new $
```

Figure 44: "bash parameter.sh -name Avdhut -mis 142203010 Using Parameters in Bash Script" command



```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~\A x + v
avdhut@142203010 ~/new/new $ cat shell_expansion.sh | head -n 10
#!/bin/bash
echo a{b,c,d}e
echo
echo {A..Z}
echo
mkdir z{1..3}
ls
avdhut@142203010 ~/new/new $
```

Figure 45: "cat shellexpansion.sh" command



```
PowerShell x Settings x root@DESKTOP-1BGH7LU: ~\A x + v
avdhut@142203010 ~/new/new $ bash shell_expansion.sh #Using Shell Expansion "with curly
braces {}" | head -n 10
abe ace ade

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

arithmetic_expansion.sh  new_nano.sh      shell_expansion.sh  z2
multiline.sh             parameter.sh        z1                  z3
avdhut@142203010 ~/new/new $
```

Figure 46: "bash shellexpansion.sh Using Shell Expansion "with curly braces "" command

A terminal window titled "PowerShell" with a tab showing "root@DESKTOP-18GH7LU: ~/". The prompt is "avdhut@142203010 ~/new_cmds \$". The user enters the command " | head -n 10". The terminal displays an error message: "-bash: syntax error near unexpected token `|'". The prompt returns to "avdhut@142203010 ~/new_cmds \$".

```
avdhut@142203010 ~/new_cmds $ | head -n 10
-bash: syntax error near unexpected token `|'
avdhut@142203010 ~/new_cmds $
```

Figure 47: " " command