

# [544] Deploying on Linux

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# Learning Objectives

- navigate a Linux file system
- operate within a Linux shell
- automate repeated tasks
- chain multiple Linux programs together into a pipeline
- redirect process output to a file

# A Shell: the most helpful program?

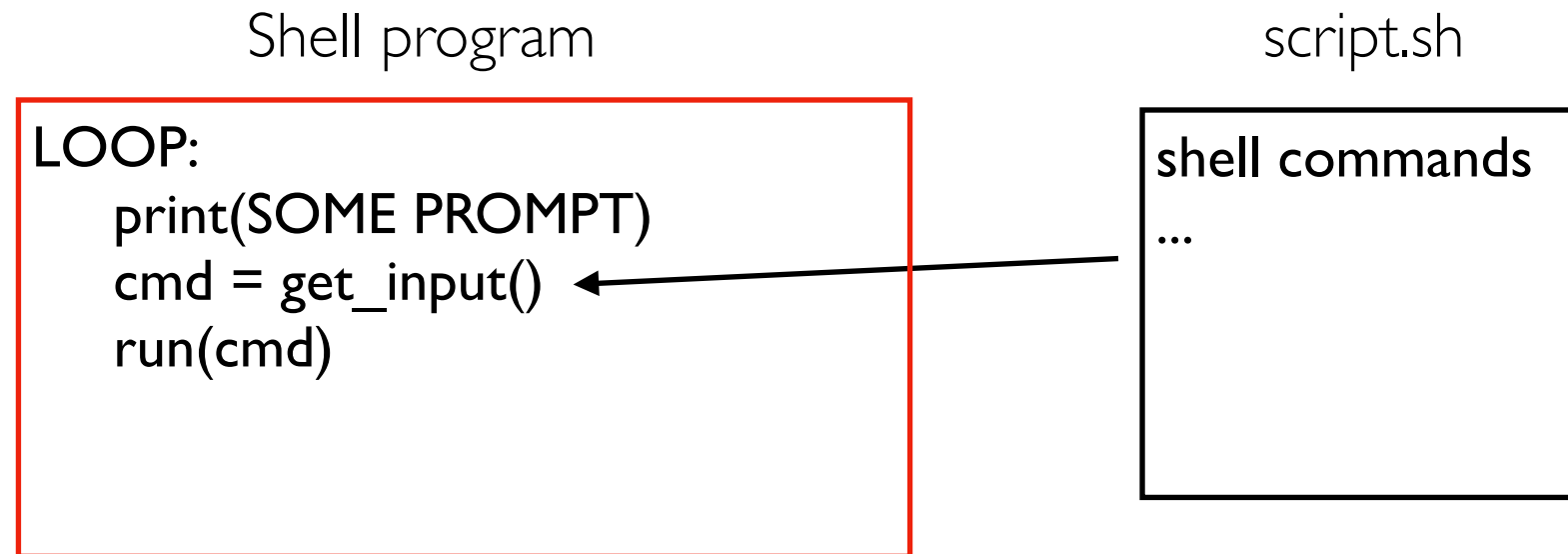
Shell program

LOOP:

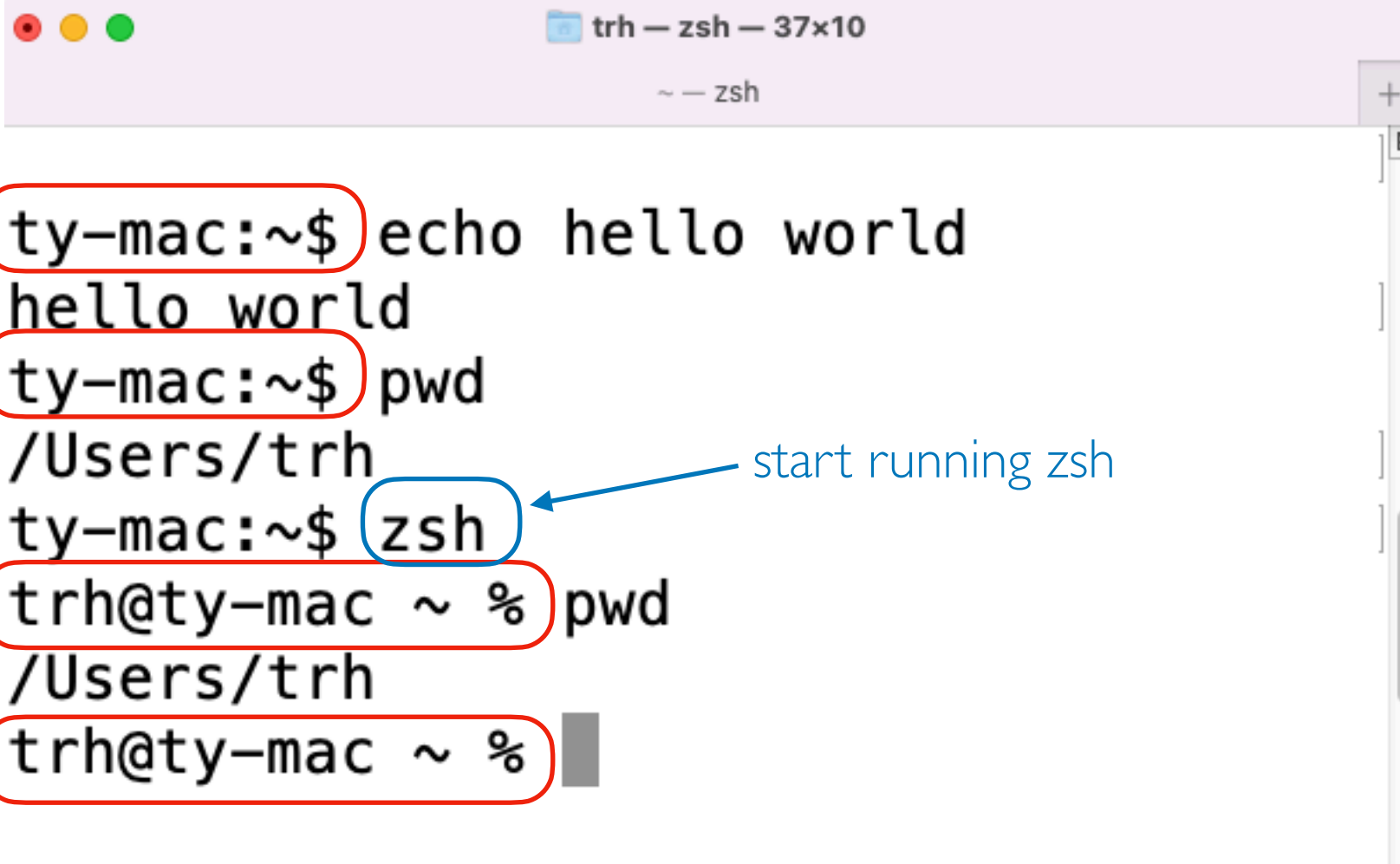
```
print(SOME PROMPT)
cmd = get_input()
run(cmd)
```



# If you can type it, you can automate it.



# You can start running a shell inside a shell



```
trh — zsh — 37x10
~ — zsh

ty-mac:~$ echo hello world
hello world
ty-mac:~$ pwd
/Users/trh
ty-mac:~$ zsh
trh@ty-mac ~ % pwd
/Users/trh
trh@ty-mac ~ %
```

bash prompt

zsh prompt

start running zsh

The terminal window shows a sequence of shell transitions. The initial prompt is a bash prompt 'ty-mac:~\$'. The user enters 'echo hello world' and 'pwd', which outputs '/Users/trh'. Then the user enters 'zsh', which changes the prompt to 'trh@ty-mac ~ %'. The user then enters 'pwd' again, which outputs '/Users/trh'. The terminal window title is 'trh — zsh — 37x10' and the current shell is '~ — zsh'.

# SSH: Secure Shell

running on  
my laptop →

```
trh — trh@instance-1: ~ — ssh trh@34.27.165.44 — 80x29
~ — trh@instance-1: ~ — ssh trh@34.27.165.44

ty-mac:~$ hostname
ty-mac
ty-mac:~$ ssh trh@34.27.165.44
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1027-gcp x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Tue Jan 24 16:13:32 UTC 2023

System load:  0.0          Processes:            102
Usage of /:   12.4% of 24.05GB  Users logged in:    0
Memory usage: 13%          IPv4 address for ens4: 10.128.0.36
Swap usage:  0%

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
  just raised the bar for easy, resilient and secure K8s cluster deployment.

  https://ubuntu.com/engage/secure-kubernetes-at-the-edge

2 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Last login: Tue Jan 24 15:59:38 2023 from 72.33.0.184
trh@instance-1:~$ hostname
instance-1
trh@instance-1:~$ █
```

running on  
my VM →

Demos...