HPC workshop online

- session 2: introduction to Linux and bash scripting -

http://hpc.dccn.nl   helpdesk@fcdonders.ru.nl   DCCN#HPC users

- presentation and demo
  - Linux: Mike van Engelenburg
  - bash scripting: Mariam Zabihi

- Q&A
  - post your questions in the Zoom chat

Why learning Linux and bash(shell) scripting?

- The HPC cluster is a Linux cluster
  - scientific software is mostly designed for Linux

- bash/shell scripting is a powerful tool for batch processing
  - a programming language tightly integrated with the OS

Linux in a nutshell

- Yet another Operating System (like Windows, MacOSX, …); but it's open-source

- created by Linus Torvalds in 1991 as a clone of Unix on PC

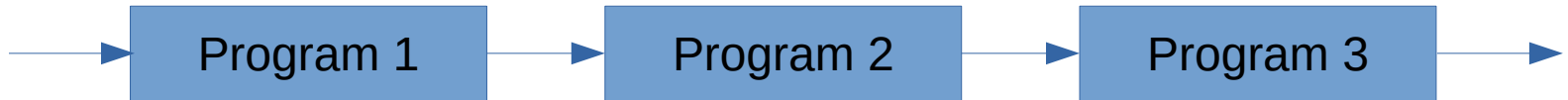| |
|---|
| **Application**: MATLAB, R, Firefox |
| **Shell**: Bash, Csh |
| **Kernel**: driver, process management |
| **Hardware**: cpu, memory, disk |

Linux/unix philosophy

- Each program does one thing well

- Expect output from every program to become input to the other

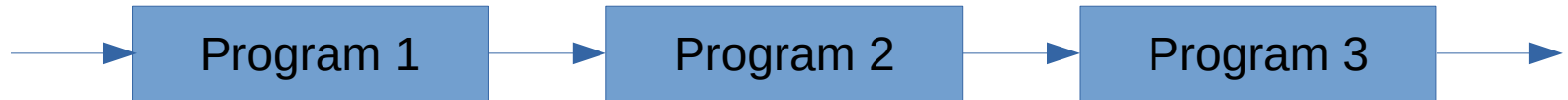| Program 1	Program 2	Program 3

Example: how many files in a directory (i.e. folder)?

list all entries in the directory → print only the "files" → count number of lines

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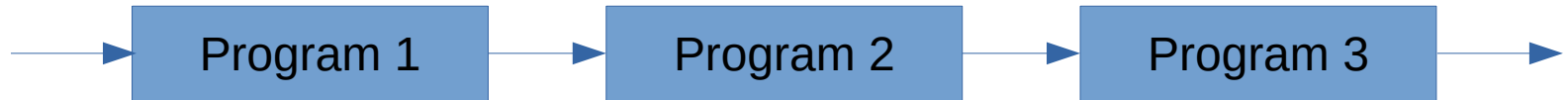- Expect output from every program to become input to the other

Program 1 → Program 2 → Program 3

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my_file_count.sh (a bash script)

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```
→  [ Program 1 ]  →  [ Program 2 ]  →  [ Program 3 ]  →
```

Example: how many files in a directory (i.e. folder)?

→ *list all entries in the directory → print only the "files" → count number of lines* →

my_file_count.sh (a bash script)