



Introduction to Bash Shell/Scripting

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What is Bash?

- **Bash** is a **Unix** shell and **command language** written by *Brian Fox* for the *GNU Project* as a **free** software **replacement** for the *Bourne* shell
- A *shell program* is typically an executable **binary** that takes commands that you type
- Typically runs in a **text window** where user can **interpret** commands to carry out various actions.
- Most **modern Linux** and **Unix** distributions provide a Bash shell by **default**.



What is Bash?

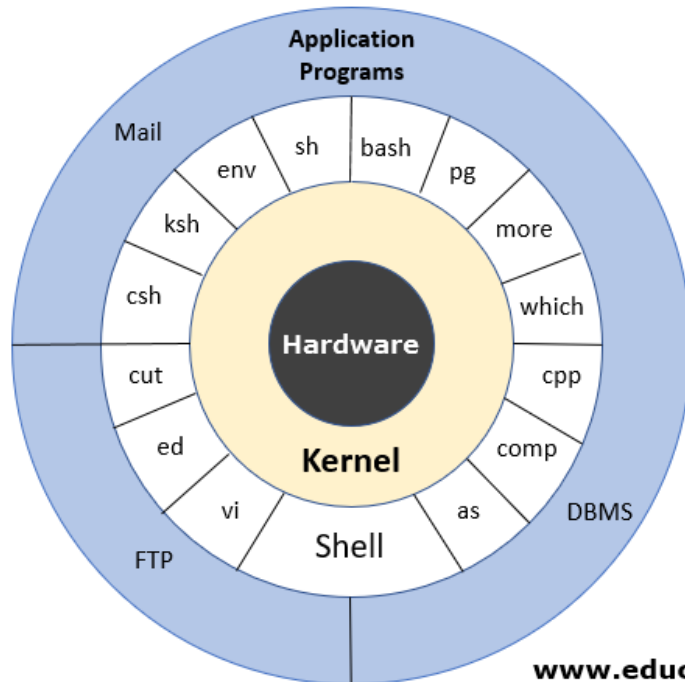


```
mark@linux-desktop: /tmp/tutorial
File Edit View Search Terminal Help
Setting up tree (1.7.0-5) ...
Processing triggers for man-db (2.8.3-2) ...
mark@linux-desktop:/tmp/tutorial$ tree
.
├── another
├── combined.txt
├── dir1
├── dir2
│   ├── dir3
│   │   ├── test_1.txt
│   │   ├── test_2.txt
│   │   └── test_3.txt
├── dir4
│   └── dir5
│       └── dir6
├── folder
└── output.txt

8 directories, 5 files
mark@linux-desktop:/tmp/tutorial$
```



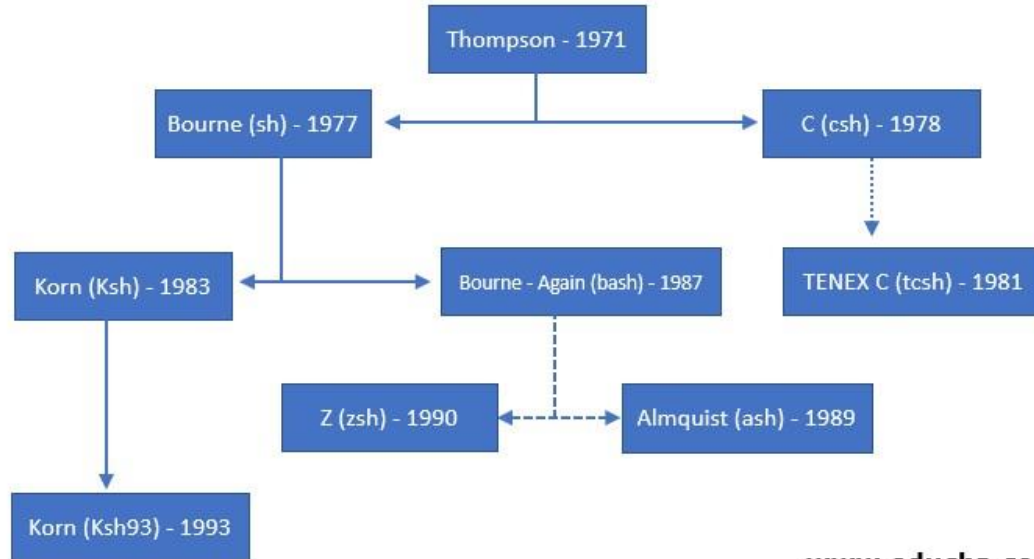
What is Bash?





What is Bash?

History of Bash





Terminal vs Shell?

■ Terminal

- ▶ A piece of **equipment** through which you could **interact** with a computer
- ▶ Today's ***terminals*** are **software representations** of the old physical ***terminals***, often running on a GUI
- ▶ Mainly helps in **transmission** of commands



Terminal vs Shell?

■ Shell

- ▶ Command *interpreter* whose main purpose is to run other programs
- ▶ Converts the command into a kernel-understandable form and passes it to the kernel.
- ▶ Terminal passes the typed commands to shell, which understands them and tells the kernel what to do.



What is Bash

Features of Bash

- ▶ Bash is **sh-compatible**. It is incorporated with the best and useful features of the Korn and C shell like *directory manipulation, job control, aliases*, etc.
- ▶ Bash can be **invoked by single-character** command line options (**-a, -b, -c, -i, -l, -r, etc.**) as well as by **multi-character** command line options also like --debugger, --help, --login, etc.
- ▶ Bash **Start-up files** are the scripts that Bash **reads and executes** when it **starts**. Each file has its specific use, and the **collection** of these files is used to help create an *environment*.
- ▶ Bash consists of **Key bindings** by which one can set up **customized** editing key sequences.



What is Bash



Features of Bash

- Bash contains **one-dimensional arrays** using which you can easily **reference** and **manipulate** the lists of data.
- Bash comprised of **Control Structures** like the **select construct** that specially used for **menu generation**.
- **Directory Stack** in Bash specifies the history of **recently-visited** directories within a **list**. Example: **pushd** builtin is used to **add** the directory to the stack, **popd** is to **remove** directory from the stack and **dirs** builtin is to **display** content of the directory stack.
- Bash also comprised of **restricted mode** for the environment **security**. A shell gets restricted if bash starts with name **rbash**, or the bash --restricted, or bash -r option passed at invocation.



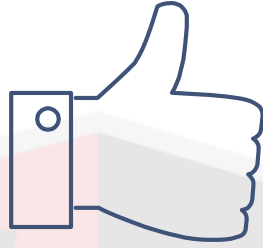
What is Bash

■ Prerequisites

- ▷ Basics of Linux/Unix environment!
- ▷ Basics of terminal
- ▷ Basic shell commands



Terminal vs Shell?



THANKS!

Any questions?