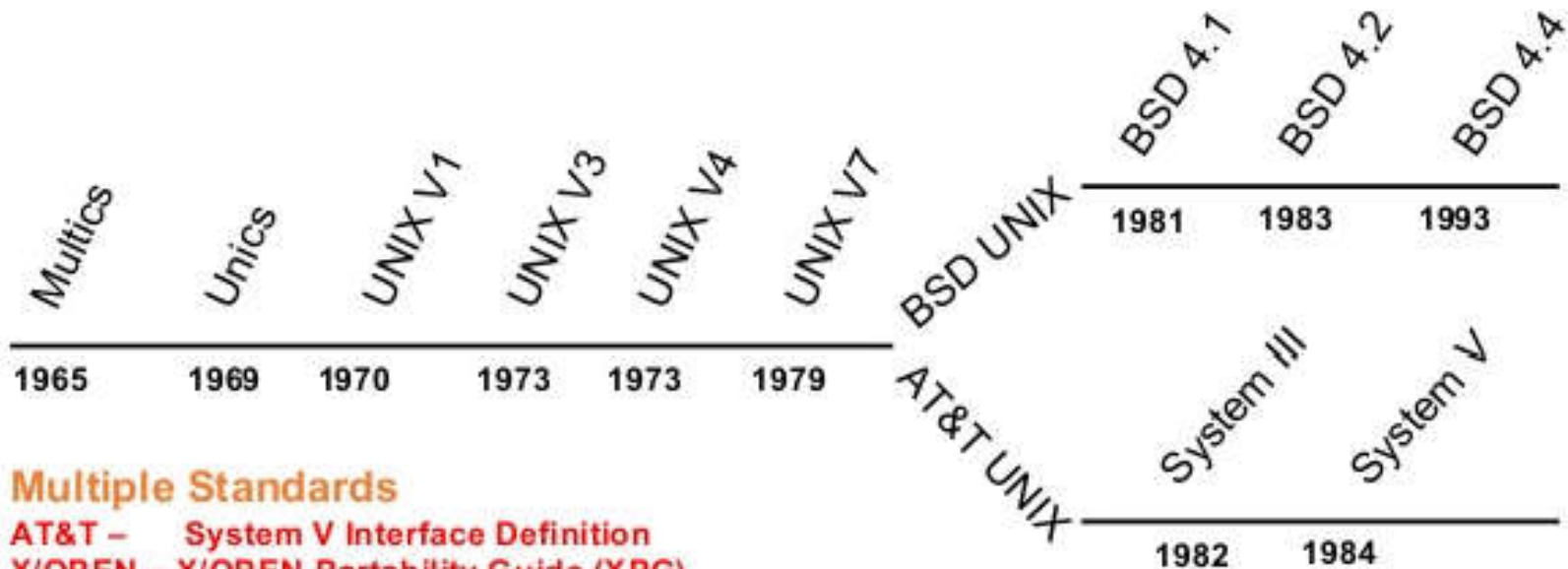


# UNIX-Introduction and Commands

# Introduction

- Introduced in research paper in 1974 by Ritchie and Thompson
- <https://www.bell-labs.com/usr/dmr/www/cacm.pdf>
- Developed at AT&T Bell laboratories
- UNIX established two new trends in OS design:
  - Previous operating systems were huge software packages
  - They were designed for specific hardware platform
- UNIX philosophy was that the OS, called the kernel, should provide the minimum essential functionality and that new functionality should be added (as user programs) only as needed.
- Originally written in assembly language but in 1973, Version 4 Unix was rewritten in C.
- In 1985, two versions of UNIX: System V UNIX (from AT&T Bell Labs) and DEC VAX version of BSD UNIX.

# Brief History



## Multiple Standards

AT&T – System V Interface Definition

X/OPEN – X/OPEN Portability Guide (XPG)

IEEE – Portable Operating System Interface for Computing Environments (POSIX)

1998 – X/OPEN & IEEE started work to merge two standards

2001 – Single UNIX Specification Version 3 (SUSV3)

Also known as IEEE1003.1:2001

2002 – ISO standardized SUSV3 and IEEE1003.1:2001

# The UNIX Philosophy

- The two illusions
- Kernel and shell
- The building-block approach
- The featureless file
- Portability
- Open systems

# UNIX: The Features

- Multi-user system
- Multi-tasking system
- Pattern matching
- The tool kit
- Programming facility
- System calls and libraries
- Documentation

# UNIX Commands

- A UNIX command is an action request given to the UNIX shell for execution.
- All UNIX commands are case sensitive.
- The command line format is:
  - the command;
  - any options required by the command
  - the command's arguments (if required).
- For example, the general form of a UNIX command is:

```
command [-option(s)] [argument(s)]
```

# UNIX Commands

- `$ date`
- `$ clear`
- `$ cal`
- `$ cal dec`
- `$ cal 12 2020`
- `$ who am I`

# UNIX Commands

- `$ ls`
- `$ ls chap*`
- `$ ls -l chap*`
- `$ cat README`
- `$ ls > list`
- `$ cat list`
- `$ wc list`
- `$ ls | wc`
- `$ exit`



# UNIX Commands

- \$ cat README
- \$ ls --all
- \$ ls -a
- \$ ls -l
- \$ ls -l -a -t
- \$ ls -lat

# UNIX Commands

- `$ wc note ; ls -l note`
- `$ ( wc note ; ls -l note ) > newlist`
- `$ (wc note; ls -l note )>newlist`