Introduction to Operating Systems

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Overview

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Schedule

- The schedule is in the central scheduling system in the Student Portal.
- This schedule is not synchronised with that in the virtual learning environment (Moodle).
- The sessions and lectures in the schedule are the only ones offered, so there are no sessions planned after the course.

- Daniel is the principal lecturer and grades the final exam.
- Alexandra and Tobias are the TAs and will tutor you and grade your hand-ins.

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Literature

- **Silberschatz2013osc** 9th edition [**Silberschatz2013osc**].

Virtual Learning Environment

- The virtual learning environment (VLE) used for the course is "Lärplattformen 2.0", i.e. Moodle.
- In the section "Course Material" found in the VLE you will find recordings of lectures and lecture slides.
- In the section "Examination" you will find all things related to the examination, i.e. hand-in assignments.
- In each hand-in box you will find the instruction for that particular assignment.
- Read the instructions carefully!
- The hand-in assignments are numbered starting on 0 and are prefixed with a letter indicating the type of assignment. Theory assignments are prefixed T and laboratory assignments are prefixed L.

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Examination

- Hand-ins: theory assignments, laboratory assignments. These are spread evenly across the course.
- Final exam the last week of the course.

Examination
Hand-ins

- T0 Overview
- T1 Processes
- T2 Memory
- L3 Paging Algorithms
- T4 Storage

Examination
Final exam

- The final exam will cover the entire course.
- The hand-in assignments serve as a good preparation for the exam.

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Overview

Development

- UNIX was originally developed at Bell Labs.
- This timeline is derived from documents in Bell Labs' historical archive [**BellLabs2002tco**].

Development timeline
The 1960s

1965 Multiplexed Infomation and Computing Service (MULTICS) was a joint effort between MIT, Bell Labs and GE to

> *"develop a convenient, interactive, useable computer system that could support many users" [***BellLabs2002tco***].*

1969
- Bell Labs withdrew from the project, but Ken Thompson, Dennis Ritchie, Douglas McIllroy, and J. F. Ossanna continued on their own.
- Started to write the system on a PDP-7, at first simply as a file system.
- The system then got a shell, an editor, and an assembler.

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The 1970s

1970
- Brian Kernighan suggests the name UNIX.
- They port the current code to a PDP-11.
- Focused for use in text-processing, patent applications for Bell Labs.

1971 Ritchie improved Thompson's B programming language into the C programming language.

1972 Thompson started rewriting UNIX in C. (And continuous improvement of C.)

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Development timeline
The 1970s, continued

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- UNIX completely rewritten in C.
- Thompson added McIlroy's concept of pipes. With this came the UNIX philosophy:

  "Write programs that do one thing and do it well. Write programs to work together. Write programs that handle text streams, because that is a universal interface." [BellLabs2002tco]

- Ritchie took initiative to manual pages, McIlroy soon took over and is the mind behind the layout of manual pages.

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- David Korn develops the Korn Shell scripting language.
- Bjarne Stroustrup develops the first version of C++.

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Present

To this day, UNIX-like operating systems operate “most large Internet servers, businesses and universities, and a major part of academic and industrial research in operating systems is based on UNIX” [**BellLabs2002tco**].

Evolution of UNIX

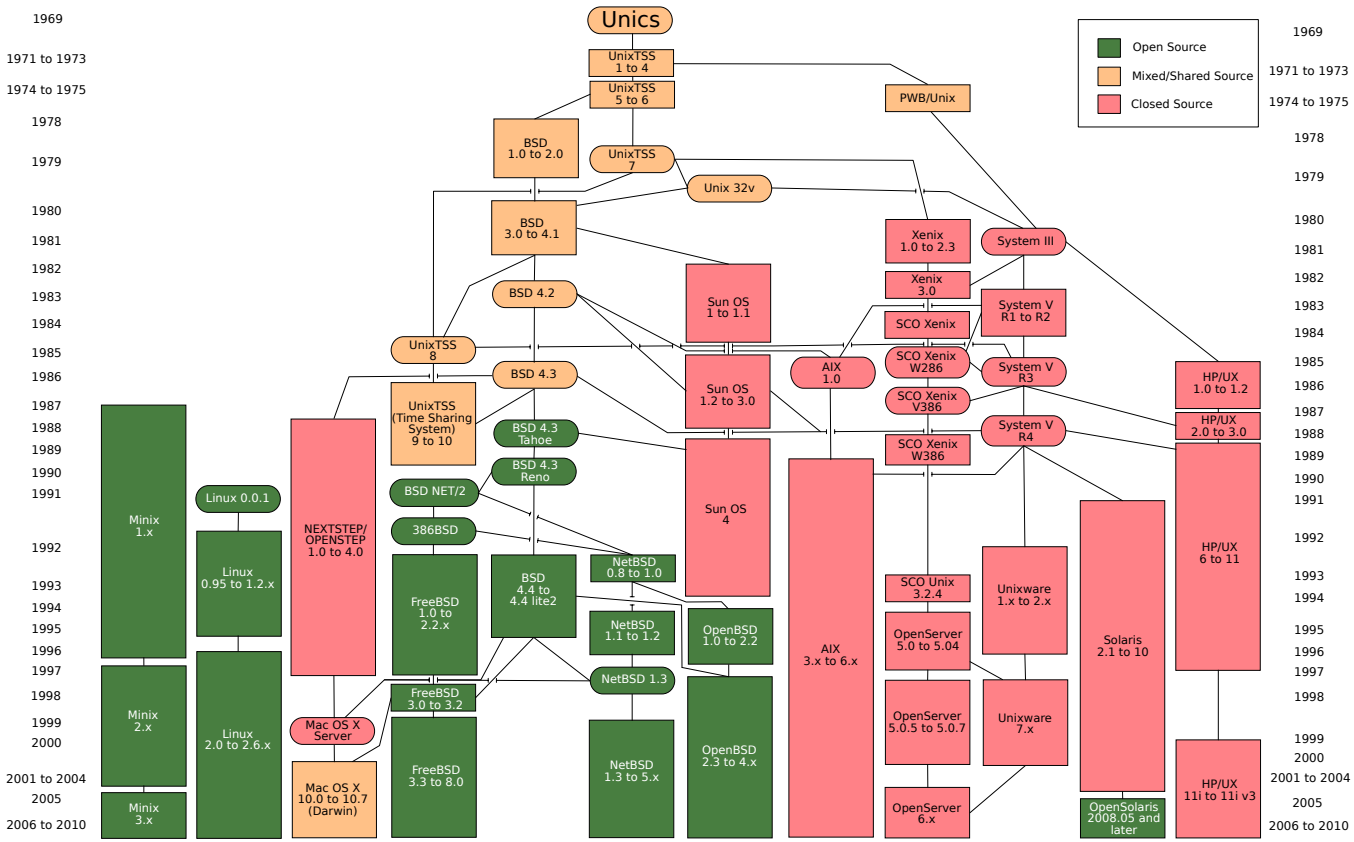

Figure: A simplified overview of UNIX history. For details see `http://www.levenez.com/unix/`. Image: `https://en.wikipedia.org/wiki/File:Unix_history-simple.svg`.

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Referenser I