Module structure.

Department of Computer Systems FIT, Czech Technical University in Prague

Module schedule

- **Module Web page**

  https://edux.fit.cvut.cz/courses/BI-PS1/en/start

- **Lectures**
  - Wednesday 7:30-9:00, TH:A-s135
  - Ing. Jan Trdlička Ph.D., A-1129, trdlicka@fit.cvut.cz

- **Tutorials**
  - Thursday 14:30-16:00, 16:15-17:45, and 18:00-19:30 in T9-348
  - Ing. Jan Trdlička Ph.D., A-1129, trdlicka@fit.cvut.cz

Module Goal

- **Module Goal**
  - Advanced user level knowledge of Unix

- **Questions**
  - Where to find help about command `ps`?
  - What is your login shell?
  - How many processes are running under user XYZ?
  - How to set up permissions for directories and files to enable file reading for user XYZ?
  - Explain the following commands:
    - `cmd=who;  echo `$cmd``
    - `ypcat passwd | grep '^[^:]*:[^:]*:[1-9][0-9]\{3\}:'`
    - ```
      prev_content=$(cat "../$to/$course_class"
      2>/dev/null)\
      {[ -n "$prev_content" ] && echo "$prev_content";}|\
      LC_ALL="$SORT_LOCALE" sort - "$course_class" \
       > "../$to/$course_class"
      ```
      ```

Module Content

- UNIX introduction.
- Command line interface (CLI): parsing order, variables.
- Exit code, flow control, loops.
- File system (FS).
- Filters, I/O redirection.
- Regular expressions, grep, awk, sed.
- User identity and FS permissions.
- Command find.
- Processes and threads.
- Compression and backup.
- Numeric calculations.

Next Modules

- Operating Systems

- Unix Administration
- MS Windows Administration
- Network Administration

- API Programming
- Programming in shell 2

Books and study materials

[1] The Linux Command Line: A Complete Introduction. William E. Shotts. No Starch Press. 2012. ISBN: 978-1593273897.

[2] Beginning Unix. P. Love, J. Merlino, C. Zimmerman, J. C. Reed, P. Weinstein. Wrox. 2005. ISBN: 978-0764579943.

[3] Unix in a Nutshell. E. Siever, S. Figgins, R. Love, A. Robbins. 2005. ISBN-13: 978-0596154486.

[4] Unix Manual Pages.

Classification

- **Tests**
  - 30 minutes, 25 points.,
  - Schedule
    - 26.10.2017 (the 4th week),
    - 23.11.2017 (the 8th week),
    - 14.12.2017 (the 11th week),
    - 4.1.2018 (the 13th week).

- Tests take place during tutorials.
- Absence from the test means 0 points from the test (exception is only serious reason).
- Correction/replacement test will be announced during the exam period.

Classification

- **This module is finished by the graded assessment.**

Points	ETCS Grade
90 – 100	A (excellent)
80 – 89	B (very good)
70 – 79	C (good)
60 – 69	D (satisfactory)
50 – 59	E (sufficient)
< 50	F (failed)

How to prepare?

- **Module has 5 ECTS credits (~150 hours per semester)**
  - 2h/w lecture + 2h/w tutorial
  - 7,5h/w homework

- **Lecture**
- **Homework**
  - Study the lecture and lab slides.
  - **Try the described examples.**
  - Solve the questions and tasks.
- **Seminar**
  - Discussion about problem and possible solutions.

How to run Unix commands?

- **Local login**
  - OS Linux, only from classroom.
- **Remote connection to FIT**
  - Servers: **fray1.fit.cvut.cz** and **fray3.fit.cvut.cz**
  - OS Solaris
  - **by SSH client**
    - From MS Windows
      - Interactive connection e.g. **PuTTY**
      - Data transfer e.g. **WinSCP**
    - From Unixu by commands
      - Interactive connection: `ssh user@fray1.fit.cvut.cz`
      - Data transfer:

```
scp –r directory user@fray1.fit.cvut.cz:directory
```

How to run Unix commands?

- **Boot from LiveDVD**
  - **Linux:** Ubuntu, Fedora, Open SUSE, Debian, Gentoo, ...
- **Run Unixu in virtual environment**
  - VirtualBox, VMWare, …
- **Install Unix in your computer**