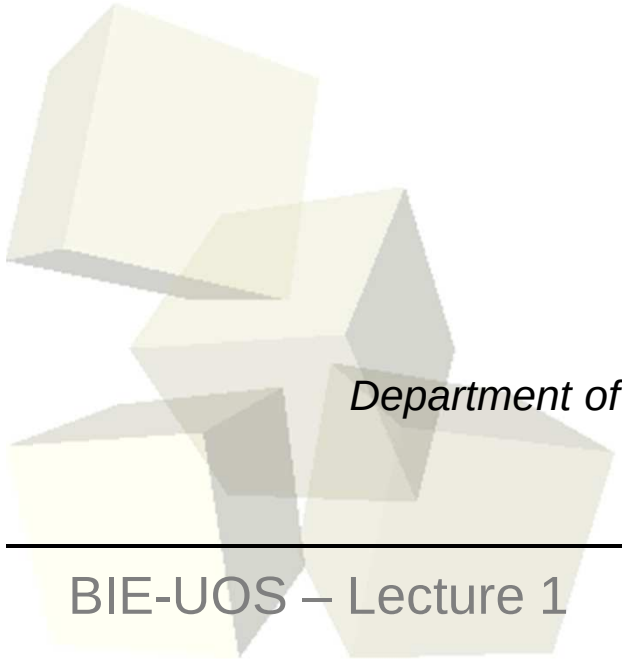
Lecture 1

Introduction.



Department of Computer Systems FIT, Czech Technical University in Prague

Module scheduling

- **Module Web page**

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

- **Lectures**
  - Monday 14:30-16:00, T9:348

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- **Seminars**
  - Monday 16:15-17:45, T9-348

    Ing. Jan Trdlička Ph.D., A-1135, trdlicka@fit.cvut.cz

Module Goal

- **Module Goal**
  - Advanced user level knowledge of Unix/MS Windows

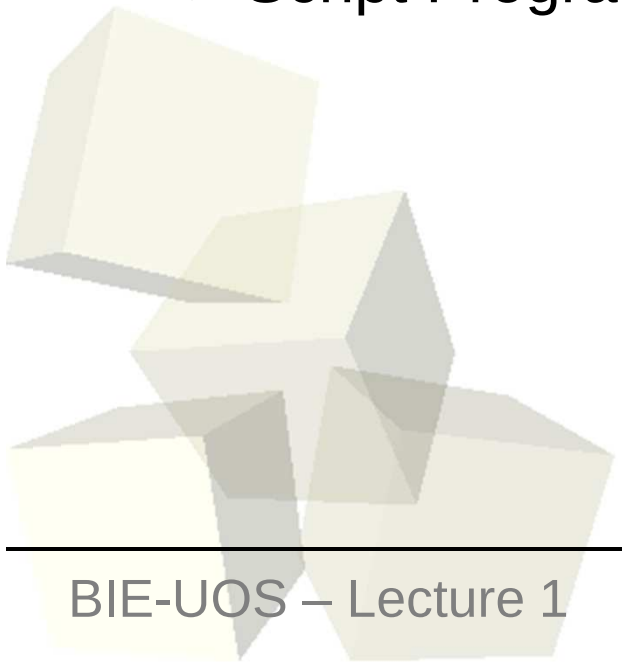
- **Questions**
  - Where to find help about command ps?
  - What is your login shell?
  - How many processes are running under user XYZ?
  - How to set up permissions for directories and files to enable file reading for user XYZ?
  - Explain the following commands:
    - `cmd=who; echo `$cmd``
    -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

Next Modules

- Operating Systems

- Unix Administration
- MS Windows Administration
- Network Administration

- API Programming
- Script Programming



Content

1. Unix: Introduction. CLI.
2. Unix: CLI – variables and commands.
3. Unix: File System.
4. Unix: Filters, IO Redirection.
5. Unix: Regular Expressions, grep, awk, sed.
6. Unix: User Identity and FS permissions.
7. Unix: Processes and Threads, IPC.
8. Unix: Exit Code, Numeric Calculations, Compression and backup.
9. Unix: Network Interface.
10. Unix: Performance, SSH.
11. MS Windows: Installation, configuration, CLI.
12. MS Windows: File System.
13. MS Windows: Network Interface. Security.

Literature

- **OS Unix**

  [1] Unix in a Nutshell, Fourth Edition by Arnold Robbins(Paperback - Oct 26, 2005)

  [2] Unix Manual Pages.

- **MS Windows XP**

  [1] Windows® Internals: Including Windows Server 2008 and Windows Vista, Fifth Edition (PRO-Developer) by Mark E. Russinovich, David A. Solomon,and Alex Ionescu (Hardcover - Jun 17, 2009)

  [2] MS Windows Resource Kit Site: http://www.microsoft.com

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)

Classification

- **Tests**
  - **3x small tests:**
    - 15 minutes, 15 points, 4th week
    - 20 minutes, 20 points., 7th and 10th week)
  - **Necessary condition for the assessment test at least 20 points from all small tests.**
  - **Assessment test:** 70 minutes, 45 points, 12th week
  - Absence from the test means 0 points from the test (exception is only serious reason).

Scheduling 2011/2012

	Week	Tuesday
1	29.9. - 23.9.	L1+S1
2	26.9. - 31.9.	L2+S2
3	3.10. - 7.10.	L3+S3
4	**10.10. - 14.10.**	**L4+S4**
5	17.10. - 21.10.	L5+S5
6	24.10. - 28.10.	L6+S6
7	**31.10. - 4.11.**	**L7+S7**
8	7.11. - 11.11.	L8+S8
9	14.11. - 18.11.	L9+S9
10	**21.11. - 25.11.**	**L10+S10**
11	28.11. - 2.12.	L11+S11
12	**5.12. - 9.12.**	**L12+S12**
13	12.12. - 16.12.	L13+S13

How to prepare?

- Module has 5 ECTS credits (~150 hours per semester)
  - 2h/w lecture + 2h/w lab
  - 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?

- **Remote connection to FIT**
  - Servers: **fray1.fit.cvut.cz** and **fray3.fit.cvut.cz**
  - **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?

- **Remote connection to FIT**
  - Servers: **fray1.fit.cvut.cz** and **fray3.fit.cvut.cz**

  - **by VNC server**
    - **Run VNC server under your identity on FIT server**
      - By commmand: vncserver
      - In directory ~/.vnc/ in file with extension .log you can find port number of the running server.
      - File xstartup defines windows manager.
      - twm can be changed e.g. /usr/bin/gnome-session

    - Install VNC client on your computer.
    - **Run VNC client on your computer.**
      - By command vncviewer
      - Enter server name, port number and password.

How to run Unix commands?

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