Implementation of Research Findings it in the Laboratories of DMTI.

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CADGME Targu Mures 2016

Structure of laboratories

Laboratory 1: Laboratory of Computer Modelling (LabIT4KT-1),

Laboratory 2: Laboratory of Numerical Mathematics (LabIT4KT-2).

(1) describe the hardware and software structure of the these laboratories, and

(2) describe the functionality of these laboratories in teaching mathematics courses at our faculty.

Laboratories

(1) **Laboratory of Computer modelling:**

The laboratory consists of two rooms, and server room:

Room 1: 12 PC, projector, 3 switches, rooter, 3 web-cams,
Room 2: 4 PC and 1 main PC, projector,
Server room: 3 servers, air-condition, UPS (common to both laboratories).

(2) **Laboratory of Numerical mathematics:**

The laboratory consists of one room, and server room:

Room 1: 20 PC, projector, 1 switch, 3 web-cams,
Server room: 3 servers, air-condition, UPS (common to both laboratories).

Laboratory of Computer modelling

Room 1:

Hardware: **Personal computer:** Intel Core i7, 4GB RAM, 1TB HDD, **web-cameras**, **switches:** cisco, 24 ports, **rooter**, **projector**, and **multimedia board**.

Software: Operating system – CentOS 7, Matlab 2016b, Statistics toolbox, Optimization toolbox, Parallel Computing Toolbox, Symbolic Math Toolbox , Partial Differential Equation Toolbox, Octave, Maxima (wxMaxima), Libre Office, WPS Office, LaTeX – TeXLive, TeXStudio, JabRef, GeoGebra.

Subjects: Laboratory designated for regular teaching schedule – Operational Analysis, Linear and Quadratic Programming, Applied Statistics, Fundamentals of the LaTeX, Applications of Differential Equations, Queuing theory, and Software Computing Tools.

Laboratory of Computer modelling

Room 2:

Hardware: **Personal computer:** Intel Core i7, 12GB RAM, 1TB HDD, graphics card NVIDIA GTX 660, **projector**.

Software: Operating system – CentOS 7, Windows 7 – 64 bit, Matlab 2016b, and toolboxes, Octave, Maxima (wxMaxima), Libre Office, WPS Office, MS Office, LaTeX – TeXLive, TeXStudio, JabRef, Software for programming in MS Windows (Delphi), c++, and software for creating and testing applications on graphics cards, Special software for blind students (only main PC).

Subjects: Laboratory designated for individual lessons. – Software tools for process modelling, LaTeX, Computer Modelling, Modelling of Physical Processes, Optimization Methods, and students' theses.

Laboratory of Numerical mathematics

Hardware: **Personal computer:** Intel Pentium Dual Core, 1GB RAM, 160GB HDD, **web-cameras**, **switches:** cisco, 48 ports, **projector**, and **multimedia board**.

Software: Operating system – CentOS 7, Matlab 2013b, Statistics toolbox, Optimization toolbox, Parallel Computing Toolbox, Symbolic Math Toolbox , Partial Differential Equation Toolbox, Octave, Maxima (wxMaxima), Libre Office, WPS Office, LaTeX – TeXLive, TeXStudio, JabRef, GeoGebra.

Subjects: Laboratory designated for regular teaching schedule – Numerical Mathematics, Operational Analysis, Linear and Quadratic Programming, Applied Statistics, Fundamentals of the LaTeX, Queuing theory.

Server Room

Server 1 – Cisco:

Hardware: 2x Xeon E5-2640v2, 16GB RAM, 3x300GB SAS HDD (2x300GB RAID1, and 300GB scratch).

Software: Operating system – CentOS 7, VirtualBox, KVM, software for web-cameras.

Provides:
(1) IPA – Identity Policy Audit (KVM),
(2) Virtual test machine (KVM),
(3) Common desktop,
(4) Installation files.

Server Room

Server 2 – Mathworks HeavyHorse:

Hardware: 2x Opteron 4386, 32GB RAM, 10.25TB HDD(2x4TB RAID1, and 2.25GB scratch).

Software: Operating system – CentOS 7, MATLAB Distributed Computing Server, VirtualBox, KVM.

Provides:
(1) MATLAB Distributed Computing Server,
(2) Parallel Computing Toolbox,
(3) SAGE – (in preparation).

Server Room

Server 3 – HP ProLiant:

Hardware: 1x Xeon E3-1220v2, 4GB RAM, 10TB HDD (2x5TB RAID1).

Software: Operating system – CentOS 7.

Provides:
(1) Archives data from IP cameras,
(2) Data archiving for system IPA,
(3) BackUp of installation files,
(4) BackUp of servers.

ACKNOWLEDGMENT

Project 1: The research was supported by the Slovak VEGA grant No. 1/0389/15,

Project 2: This work is the result of the project implementation: IT4KT - Information technology for knowledge transfer (ITMS project code: 26220220123) supported by the Research & Development Operational Program funded by the ERDF.

Thank you for your attention

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