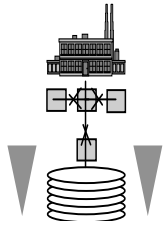


# Automating Windows and Windows Applications



## Vertiefendes Übungsprojekt 1 (PI+VO)

### Vertiefungskurs 2 (SoWi Bachelor)

**(Block system from 2008-10-10 through 2008-11-21)**

Inskr.-Nr. 1074, Schulungsraum 2 (SCHR 2, UZA II)

LV-Leiter	Start	Time/Location
Flatscher	Friday, 2008-10-10	9:00 - 13:00, SCHR 2 (UZA 2)

#### RELATING TO THE CURRICULUM

**Diplomstudium, Spezielle BW „Wirtschaftsinformatik“: Wahlpflichtvorlesung mit CP**

**WI-Bakkalaureat „Wirtschaftsinformatik“: „Vertiefendes Übungsprojekt 1“**

**Bakkalaureat new: „Management Information Systems (MIS)“: „VK 2“**

**Zudem: freies Wahlfach in den Diplom-Studienordnungen**

#### BRIEF OVERVIEW

This lecture will serve as a basic introduction into the **object-oriented thinking and programming** applying the acquired knowledge **to automate (script/remote-control) the Windows operating system and Windows applications**. There are no pre-requisites necessary to be able to successfully follow this class!

In the course of this class you will learn **how easy it is** for example **to remote-control Windows itself and end-user applications** (like MS Office, OpenOffice, Eudora, Acrobat Exchange) and combine them with a simple script **to form new applications that support and solve business process problems**.

The learned knowledge will be applied in the form of little hands-on homework examples that are tackled **in groups of two to three students**, such that **no one will be left on its own**.

At the end of this lecture you will have fully understood all taught concepts and be able to apply them (using any scripting language). Besides the object-oriented concepts, you will learn about the Windows infrastructure technologies COM/OLE/ActiveX and (the lesser known) “Windows Script Host (WSH)” which play a very important role in automating/scripting Windows and Windows applications.

The acquired knowledge and first-hand experiences will create problem-solving skills that will set you apart from any of your colleagues. You will be able to create automated solutions with end-user applications for the business departments you will be working for!

## GOALS

In the course of this lecture **you will learn**

- the **basics of programming** and the **object-oriented paradigm**,
- the **fundamental concepts** of automating (scripting) Windows and Windows applications and **to apply them** on your own,
- the basics of the HTML mark-up language and Microsoft's **DHTML** (Dynamic HTML) as implemented in the Microsoft **Internet Explorer** (MSIE), which allows to embed scripts into HTML and **use the MSIE browser as a graphical user interface (GUI) and print engine** for scripts,
- to **research the Internet** (e.g. newsgroups, search engines) **to learn about** interesting additional possibilities of **automating Windows** applications,
- the basics of the **very easy** to learn and to apply free open-source scripting language **ooRexx**,
- finally, how **to carry over script code between ooRexx** and **VBS** (Visual Basic Script), which comes with Windows.
- „**Visual Basic Script**“ („**VBScript**“) from Microsoft.

## ORGANISATION

This lecture is organised in form of a „block lecture“ followed by presentations at the given instalments. On each date there will be two instalments delimited by a short intermission. The participants will get small assignments which they will solve in groups of two to three students.

Active participation (e.g. questions, discussions) is highly appreciated! (“Those who ask learn the most!”)

## PRELIMINARIES

- Studies in the field of „Bakkalaureat neu“, specialised field of Business Administration „Management Information Systems (MIS)“: this serves as “Vertiefungskurs 2”
- Studies in the field of „Wirtschaftsinformatik Bakkalaureat“: this serves as “Vertiefendes Übungsprojekt 1”
- Any one of the outbound studies „Diplomstudium Speziellen Betriebswirtschaftslehre Wirtschaftsinformatik: this serves as a elective („Wahlfach“)

## LITERATURE

- Fosdick H.: REXX – Programmer's Reference, Wiley Publishing, Indianapolis 2005.
- Hansen H.R., Neumann G.: Wirtschaftsinformatik I. 9. Auflage, UTB 802, Lucius & Lucius, Stuttgart 2005.
- Veneskey G.L., Trosky W., Urbaniak J.J.: Object REXX by Example. Aviar, Pittsburgh 1996.

**OVERVIEW OF DATES, BRIEF SYLLABUS**

#	CONTENT	DATE
<b>Introduction into Programming and the Object-oriented Paradigm (ooRexx)</b>		
1	Overview of the course, history of ooRexx, a minimal program, variable, statement, block, branch, repetition (loop)	2008-10-10 09:00-10:45 SCHR 2 (UZA II)
2	Label, procedure, function, searching order for functions/procedures, scope, Rexx functions, stem	2008-10-10 11:15-13:00 SCHR 2 (UZA II)
3	ooRexx extensions: routine, argument by reference, exception handling, class, method, attribute, message, scope, creation of objects	2008-10-17 09:00-10:45 SCHR 2 (UZA II)
4	Inheritance, specialisation, scopes, multirheading, class hierarchy I	2008-10-17 11:15-13:00 SCHR 2 (UZA II)
5	Class hierarchy II, collection classes, „the big picture“	2008-10-24 09:00-10:45 SCHR 2 (UZA II)
<b>Introduction into Automating of Windows and Windows Applications</b>		
6	OLE-Automation/ActiveX-Automation, the class "OLEObject", examples, Microsoft Internet Explorer's DHTML	2008-10-24 11:15-13:00 SCHR 2 (UZA II)
7	Windows Script Host (WSH), Windows Script Engine (WSE), Windows Script File (WSF), Windows Script Component (WSC)	2008-10-31 09:00-10:45 SCHR 2 (UZA II)
8	ooRexx vs. MS Visual Basic Script ("VBScript", "VBS"), Windows configuration relating to file extensions Assignments	2008-10-31 11:15-13:00 SCHR 2 (UZA II)
<b>Mini-Project and Presentation</b>		
9	Presentation (assignments, possible solutions): ooRexx, DHTML; Q&A, discussions	2008-11-14 09:00-10:45 SCHR 2 (UZA II)
10	Presentation (assignments, possible solutions): WSF, WSC with DHTML-frontend; Q&A, discussions. Presentation of short sketches of the concluding "short project": integration/remote-controlling at least three Windows applications (at least one Windows application must not be from Microsoft)	2008-11-14 11:15-13:00 SCHR 2 (UZA II)
11	Presentation (assignments, possible solutions): Automating Windows (WSH, WSF, WSC)	2008-11-21 09:00-10:45 SCHR 2 (UZA II)
12	Presentation (assignments, possible solutions): concluding "short project"; Q&A, discussions	2008-11-21 11:15-13:00 SCHR 2 (UZA II)

## URLS FOR REXX AND ooREXX

"Rexx Language Association":

<http://www.RexxLA.org/>

ooRexx Homepage:

<http://www.ooRexx.org>

NetNews-Group:

<news:comp.lang.rexx>

"Object-oriented Links", entry: "Object Rexx":

[http://www.cetus-links.org/oo\\_rexx.html](http://www.cetus-links.org/oo_rexx.html)

„vim“ Editor (starting with version 7.1 it contains syntax highlighting for ooRexx)

<http://www.vim.org/>  
<ftp://ftp.vim.org/pub/vim/pc/gvim71.exe> (Windows-Version)

Article about history and concepts of Rexx and Object Rexx (ECOOP 2006 Workshop)

<http://prog.vub.ac.be/~wdmeuter/RDL06/Flatscher.pdf>

## MEANS OF COMMUNICATION

To improve the *lecture-related* communication a mailing list **aw2008w** will be created. To subscribe to this mailing list, you must enrol at the following WWW-page in the fall:

<http://alice.wu-wien.ac.at/mailman/listinfo/aw2008w>

After subscribing you can send to [aw2008w@wi.wu-wien.ac.at](mailto:aw2008w@wi.wu-wien.ac.at), which will be received by the mailing list and redistributed to all subscribed members.

With the help of this mailing list you are able to ask and discuss lecture related issues with your colleagues, day and night (e.g. to exchange solutions or help each other).

## MATERIALS FOR THE LECTURE

You can get ooRexx for free from its homepage (<http://www.ooRexx.org>).

Foils for his lecture:

<http://wi.wu-wien.ac.at/rgf/wu/lehre/autowin/material/foils/>