

Generating Software from Specifications

Prof. Dr. Uwe Kastens

WS 2013 / 14

Lecture Generating Software from Specifications WS 2013/14 / Slide 001

Objectives:

Start

In the lecture:

Welcome

Objectives

The participants will learn

- to **use generators** for specific software tasks,
- to **design domain specific languages (DSLs)**,
- to **implement domain specific languages (DSLs)**,
- to **use the Eli system** to create generators.

The participants will **define their own application project and implement it.**

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Objectives:

Be aware of the objectives

In the lecture:

Items are explained

Questions:

Do these objectives fit to yours?

Contents

	Chapter in GSS Book
1. Introduction	1
2. Constructing Trees	6
3. Visiting Trees	4
4. Names, Entities, and Properties	3
5. Binding Names to Entities	5
6. Structured Output	2
7. Library of Specification Modules	-
8. An Integrated Approach (Structure Generator)	7
9. Individual Projects	-
10. Visual Languages Developed using DEViL	
Phase 1:	Lectures, practical tutorials, and individual work are tightly interleaved
Phase 2:	Participants work in groups on their projects. During lecture hours advice is given, problems are discussed, and experience are exchanged.

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Objectives:

Understand the lecture outline

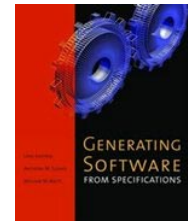
In the lecture:

It will be explained

- Order of the topics,
- interleaving with practical work,
- project work.

References

- U. Kastens: **Generating Software from Specifications**
Elektronic Script, SS 2012
<http://ag-kastens.upb.de/lehre/material/gss>



- Uwe Kastens, Anthony M. Sloane, William M. Waite:
Generating Software from Specifications,
Jones and Bartlett Publishers, 2007

- **Eli Online Documentation and Download**
<http://eli-project.sourceforge.net> (download)



- **DEViL - Development Environment for Visual Languages**
<http://devil.cs.upb.de>

Papers on DSL and Reuse:

- Mernik, Heering, Sloane: When and How to Develop Domain-Specific Languages, ACM Computing Surveys, Vol. 37, No. 4, December 2005, pp. 316-344
- Ch. W. Kruger: Software Reuse, ACM Computing Surveys, 24(2), 1992
- R. Prieto-Diaz: Status Report: Software reusability, IEEE Software, 10(3), 1993

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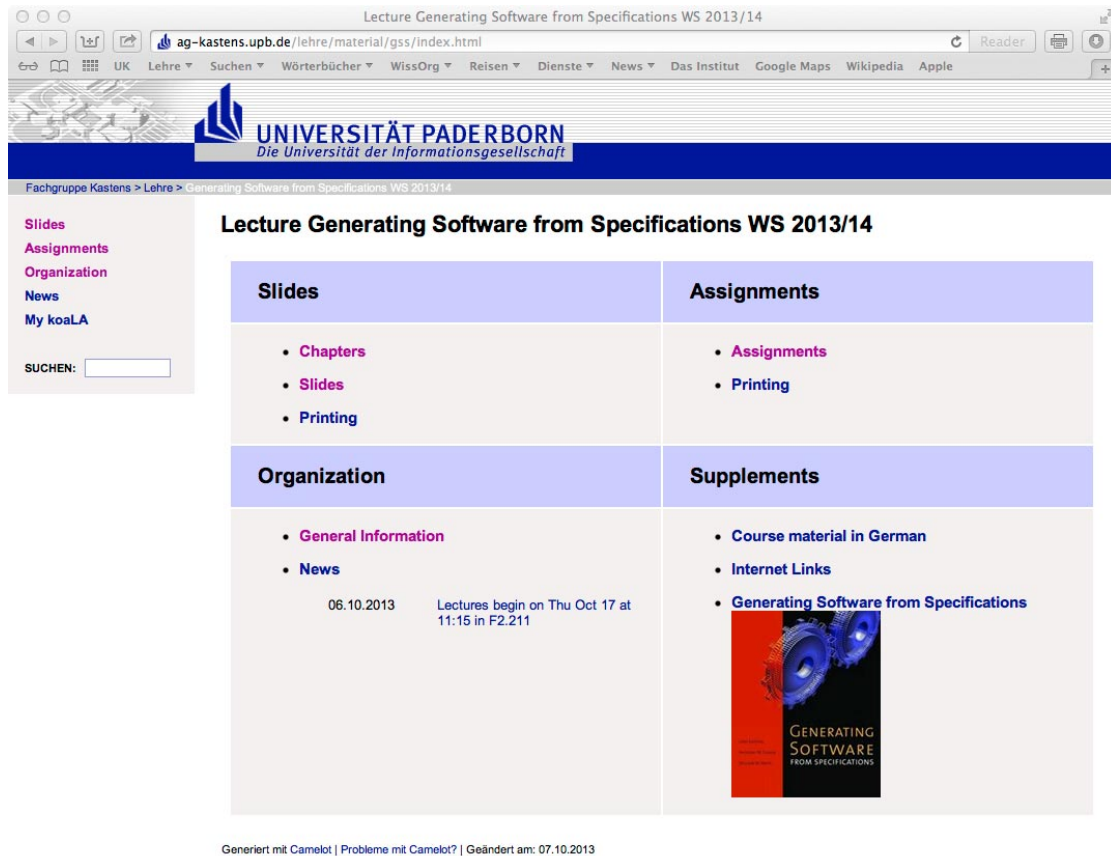
Objectives:

Know where to access which information

In the lecture:

The characteristics of the references will be explained.

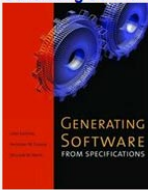
Home Page of GSS Lecture



The screenshot shows a web browser window displaying the home page of the GSS Lecture. The browser's address bar shows the URL `ag-kastens.upb.de/lehre/material/gss/index.html`. The page header features the logo of the University of Paderborn, with the text "UNIVERSITÄT PADERBORN Die Universität der Informationsgesellschaft". Below the header, the page title is "Lecture Generating Software from Specifications WS 2013/14".

The main content area is organized into a grid of four sections:

- Slides:**
 - Chapters
 - Slides
 - Printing
- Assignments:**
 - Assignments
 - Printing
- Organization:**
 - General Information
 - News

06.10.2013 Lectures begin on Thu Oct 17 at 11:15 in F2.211
- Supplements:**
 - Course material in German
 - Internet Links
 - Generating Software from Specifications

At the bottom of the page, there is a footer that reads: "Generiert mit Camelot | Probleme mit Camelot? | Geändert am: 07.10.2013".

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Objectives:

Find the GSS home page

In the lecture:

It will be explained how to use the lecture material.

Organization

Personen

Sprechstunde Uwe Kastens:

- Mi 16:00 – 17:00 Uhr
- Die 11:00 – 12:00 Uhr

Übungsbetreuer:

- Peter Pfahler

Termine

Vorlesung

- Di, 9:15 – 10:45 Uhr F0.530

Beginn: Di, 15. Oktober 2013 um 9:15 Uhr

Übungen

Die Übungen werden im 14-tägigen Abstand 2-stündig angeboten. Das Vorlesungsverzeichnis sieht 4 Übungsgruppen vor:

- G1: Dienstag 11:00 Uhr, *ungerade Wochen*, Beginn 22.10.2013, erst in F0.530, dann im Rechner-Pool F1 (hinterer Teil)
- G2: Dienstag 11:00 Uhr, *gerade Wochen*, Beginn 15.10.2013, erst in F0.530, dann im Rechner-Pool F1 (hinterer Teil)
- G3: Donnerstag 09:15 Uhr, *ungerade Wochen*, Beginn 24.10.2013, erst in F2.211, dann im Rechner-Pool F1 (hinterer Teil)
- G4: Freitag 09:15 Uhr, *gerade Wochen*, Beginn 18.10.2013, erst in F2.211, dann im Rechner-Pool F1 (hinterer Teil)

Prüfungstermine

Mündliche Prüfungen von ca 30 min Dauer im Rahmen von Modulprüfungen; für Studierende anderer Studiengänge als Informatik auch Einzelprüfungen.

Es werden zwei Prüfungszeiträume angeboten:

1. 12.-14. Februar 2014
2. 01.-03. April 2014

Zu Anmeldung in PAUL und Terminvergabe siehe <http://www.cs.uni-paderborn.de/studierende/pruefungswesen/pruefungsanmeldung.html>

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Objectives:

Find the GSS home page

In the lecture:

The organization of the lecture will be explained.