Declarative Languages H0N03

2020 – 2021

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Aims

The students get a thorough understanding of declarative programming languages.
We focus on the knowledge and the use in practice of two representative declarative languages.

Idea: WHAT (specification of the knowledge) and not HOW (steps of computation)

Aims

Focus on the most important aspects of the languages by using example programs and demonstrating programming techniques.

Basics of the execution mechanisms of the logic and functional programming languages.

2020-2021

- Course material can be obtained at the bookstore of VTK and
- (more) Handouts will be made available on Toledo: H0N03 Declarative Languages, open for guests
  (students Studie van Declarative Talen)
- KULoket (ISP) and Toledo are not the same

Different scenario's due to COVID-19

- Normal scenario: lectures (to be prepared) and exercise sessions.
- **Limited presence** on campus:
  - Attend lectures with a turn role (recording/streaming)
  - Lectures should be **prepared**: reading material + some basic exercises
  - The lectures interactively build on the preparation.
  - Exercise sessions: more advanced exercises with online TA contact every 2 weeks in small groups
  - Slack workspace:

https://join.slack.com/t/declarativela-yhx2243/shared_invite/zt-hlqcty7m-k9fcSwBbetxeaspFrwbYRg

Learning activities: lectures

- Preparation of the lectures
  - Self-study based on reading material
  - Solve some basic exercises
  - Slack channel: lecture2_preparation
- Lectures
  - Build on the preparation: additional material/ discussion/ live coding

Learning activites: exercise sessions

- Practicalities (2020-2021):
  to be announced later
- Weekly more advanced exercises.
- Make sure you keep up with the material
- **Solve the exercises yourselves**
- Guidance of a teaching assistant
- E-systant tool

Learning activity: **individual** programming assignments

- Two INDIVIDUAL programming assignments: Prolog and Haskell
- Voluntary
- Good preparation for the final exam
- Duration: 2h00
- Feedback
- (Provisionary) Dates: in the weeks of 29/10/2020 and 10/12/2020

Written examen (January 2021)

- Write programs (Prolog and Haskell).
  - individual
  - 4 hours in a PC-lab at cs: linux with SWI Prolog and GHC
  - Online manuals of the systems
  - Open book.
- Make sure you can work with the DT software on the Linux computers of the department.
- Do I pass if I only know Prolog?

DIFFICULT course

- Previous knowledge:
  programming + recursion
- Be active during the semester
- Ask questions
- Write programs

- Test recursion: give the code for summing the numbers 1 to n (using recursion)

Declarative paradigm

- Different way of programming with specific concepts.
- Important to ”learn” new concepts.
- What makes sense when?
- Not in this course: the interaction with other paradigms/tools.