INFO-F403
Language theory and compiling

Gilles Geeraerts

Academic year 2013-2014

Organisation

- Normally:
  - Lecture on wednesday 10-12 AM
  - Practical on wednesday 4-6 PM
- Sometimes, we *will* switch...

Organisation

Timetable

dates	week		Wed. 10-12h	Wed. 16-18h	Comment	Project
18-sept.-13		**1**	Lecture 1	Lecture 2		Part 1
25-sept.-13		**2**	Lecture 3	Pract. 1		
2-oct.-13		**3**	Pract. 2		sport afternoon	
9-oct.-13		**4**	Lecture 4	Lecture 5		
16-oct.-13		**5**	Lecture 6	Pract. 3		
23-oct.-13		**6**	Lecture 7	Pract. 4		
30-oct.-13		**7**	Lecture 8	Pract. 5	buffer	
6-nov.-13		**8**	Lecture 9	Pract. 6		Part 2
13-nov.-13		**9**	Lecture 10	Pract. 7		
20-nov.-13		**10**			St-V	
27-nov.-13		**11**	Lecture 11	Pract. 8		
4-déc.-13		**12**	Lecture 12	Pract. 9		
11-déc.-13		**13**	Pract. 10	Pract. 11		
18-déc.-13		**14**	Pract. 12		buffer	

To be confirmed...

Organisation

- TA:
  - **M. Jean-Sébastien LERAT**
    - Office O8.212, Phone: 5606

Université Virtuelle

- The course has a page on the **UV**
  - Slides
  - Practicals: slides, exercises, and answers
  - Project

Objective of the course

- **Introduce** students to basic **language theory**
  - Language theory is a corner stone of theoretical computer science
  - It has many practical implications, including compiler construction
- **Introduce** the students to basic **compiler construction**

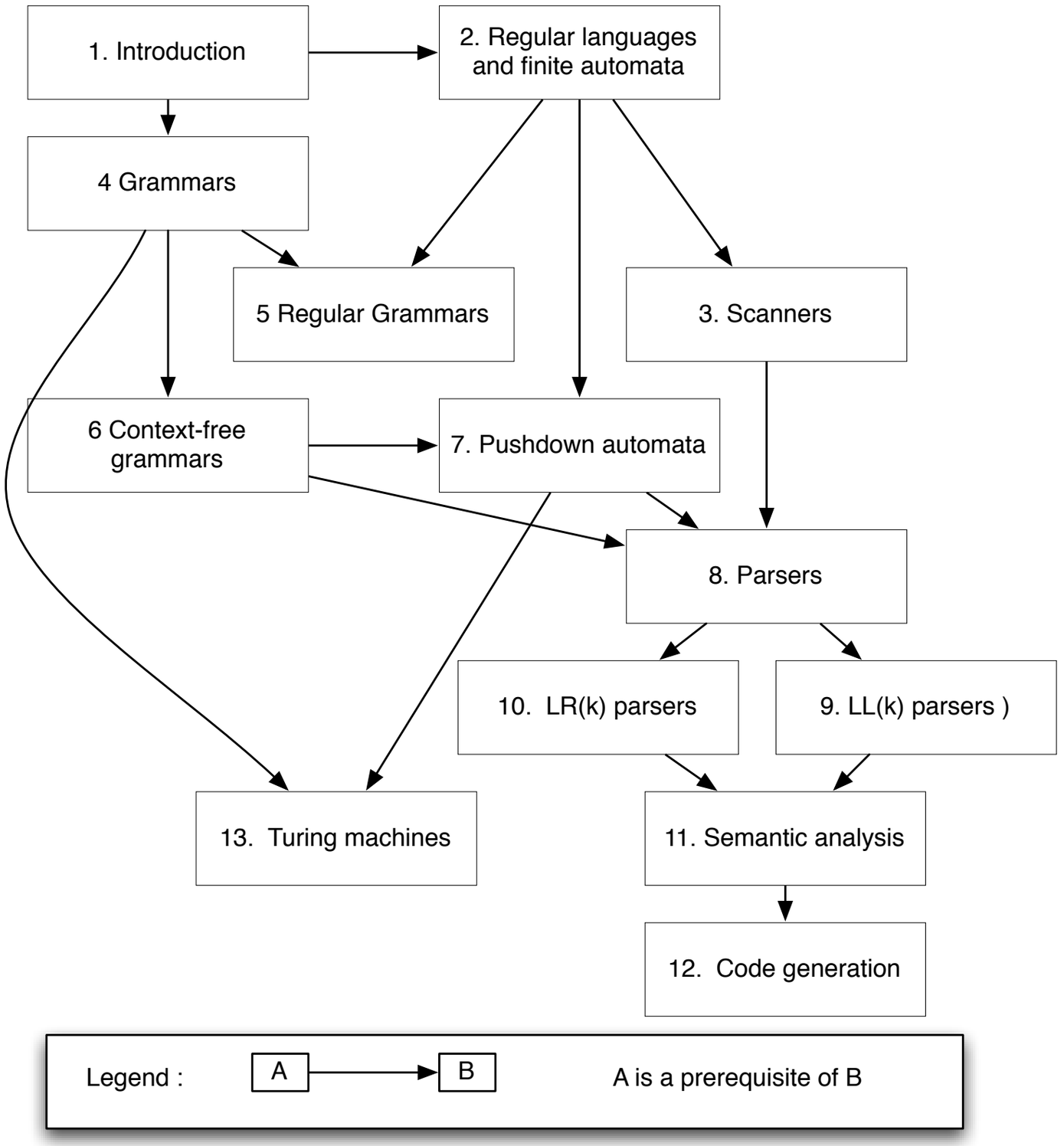
Learning outcomes

- **Know and understand** the basic langage theory concepts that are introduced in the course
- **Know and understand** the basic principles of a compiler
- Be able to **apply those concepts** to the construction of an elementary compiler for a simple language

Course content

- **Language** is a fundamental concept for human beings
  - It has applications in many fields... including computer science
- In CS we need languages that can be **manipulated by computers**
- We will be mainly concerned with **formal** languages (vs. natural languages)
  - Their syntax and semantics can be mathematically (formally) defined
  - They can thus be manipulated mechanically

Course outline



Evaluation

- Outcomes 1 & 2: *Know and understand basic langage theory concepts and principles of a compiler*
  - Will be evaluated mainly during the **exam** (written)
- Outcome 3: *apply those concepts to the construction of an elementary compiler...*
  - Will be evaluated mainly thanks to the **project (1 ECTS)**

Evaluation - Project

- This year, the project takes place during the **first quadri** !
  - You will be asked to produce some deliverables by the end of October
  - Then, the final project for the end of the year.
  - The project will be assessed by an oral defense.

Evaluation - Project

- **Topic** of the project:
  - write a basic compiler for a simple language
  - target language: P-machine (stack based language)
  - Simple compiler, yet illustrative of the principles at work

Evaluation

- **Final mark /20**:
  - 8 points for the project (1 ECTS project + 1 ECTS practicals)
  - 12 points for the exam (1 ECTS practicals + 2 ECTS theory)
  - **There is no second session for the project !**