

UNIVERSITY OF TWENTE.



FINAL PROJECT



12 JUNE 2019

MODULE 8: PROGRAMMING PARADIGMS





CHARACTERISTICS

- Define your own language
 - Fairly minimal mandatory features
 - Basic data types: integers, Booleans, variables with { nested { scopes } }
 - Simple expressions and statements (assignments, if, while)
 - Basic concurrency features (**fork/join** or **parbegin/parend**, shared memory)
 - A lot of optional extensions
 - More interesting data types, procedures, ...
 - Read the project description!
 - Compile to SPRIL (SPRockell Instruction Language)
 - SPRockell = Simulated PROCessor in hasKELL \neq IL0C
 - Second half of this lecture
 - Three options:
 1. Everything in ANTLR + Java
 2. Parsing in ANTLR + Java, from AST to SPRIL in Haskell
 3. Everything in Haskell (using ParSec)
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GRADING

Basic grade

<i>Language feature</i>	<i>Max</i>
Mandatory part	6.0
Soft division	+0.3
Procedures/functions	+1.0
— also nested	+0.5
— with call-by-reference	+0.5
Exception handling	+1.0
Other extensions	+1.0
Arrays	+1.0
Strings	+0.5
Enumerated types	+0.5
Records	+0.5
Pointers	+1.0
Objects	+1.5
Optimisations	+2.0

Compilation process

<i>Activity</i>	<i>Max</i>
JAVA code generation of SPRIL	+0.0
HASKELL code generation	+0.5
HASKELL front-end	+1.0
Extending SPROCKELL	+0.5

Final product

<i>Quality aspect</i>	<i>Range</i>
Quality of testing	-1.5 ... +1.5
All tests automatically executable	+0.5
Structure/readability of grammar	-1.0 ... +0.5
Structure/readability of code	-2.0 ... +1.0
Completeness/readability of report	-2.0 ... +1.0

PROCEDURE

- To be done in pairs
 - By default: the same pairs as for the lab, LP and FP projects
 - Now is the time to reconsider
 - *We see a constant yearly rate of 5% team trouble*
- Submit by uploading to the Canvas assignment
 - Deadline extension granted as exception (for provable reasons, e.g. illness)
 - But: in general not a posteriori – so contact us before / in time!
- General rules for late submission apply
 - -1 point for every day late (after truncation to max. grade 10)
 - Late submission is better than no submission
- Stick to the submission guidelines

SCHEDULE

Week						Block
16	22.Apr Easter	23.Apr b1:d1	24.Apr b1:d2	25.Apr b1:d3	26.Apr b1:d4	1
17	29.Apr b1:d5	30.Apr b2:d1	1.May b2:d2	2.May b2:d3	3.May b2:d4	1/2
18	6.May b2:d5	7.May b3:d1	8.May b3:d2	9.May b3:d3	10.May b3:d4	2/3
19	13.May b3:d5	14.May b4:d1	15.May b4:d2	16.May b4:d3	17.May b4:d4	3/4
20	20.May b4:d5	21.May b4:d6	22.May b5:d1	23.May b5:d2	24.May b5:d3	4/5
21	27.May b5:d4	28.May b5:d5	29.May b6:d1	30.May Ascension	31.May Bridge Day	5/6
22	3.Jun b6:d2	4.Jun b6:d3	5.Jun b6:d4	6.Jun b6:d5	7.Jun b7:d1	6/7
23	10.Jun Whit Monday	11.Jun b7:d2	12.Jun b7:d3	13.Jun b7:d4	14.Jun b7:d5	7
24	17.Jun b8:d1	18.Jun b8:d2	19.Jun b8:d3	20.Jun b8:d4	21.Jun b8:d5	8
25	24.Jun b9:d1	25.Jun b9:d2	26.Jun b9:d3	27.Jun b9:d4	28.Jun b9:d5	9
26	1.Jul b10:d1	2.Jul b10:d2	3.Jul b10:d3	4.Jul b10:d4	5.Jul b10:d5	10

Now

Submission deadline

SCHEDULE (SUGGESTION)

- Block 7
 - Choice of language features, sample programs
- Block 8
 - Syntax definition, elaboration (type checking and other analyses),
- Block 9
 - Code generation and testing
- Block 10
 - Report and submission ← Make sure you have time for this
- Final deadline
 - Friday 5 July 2019
 - The rules for late submission apply.

- Show your progress and discuss your choices at least once, in one of the project lab sessions (may require sign-off)