

# Course introduction

## Functional Programming 2019-2020



Universiteit Utrecht

[Faculty of Science  
Information and Computing  
Sciences]

```
import Data.Char(toUpper)

mkWelcomeMessage stylize year currentN lastN =
  concat
    [ stylize "Welcome"
    , " to INFOFP in " ++ show year ++ "!\n\n"
    , "We have " ++ show delta
    , " more students than last year!"
    ]
  where delta = currentN - lastN

welcomeMessage =
  mkWelcomeMessage capitalize 2020 348 291
  where capitalize = map toUpper
```



WELCOME to INFOFP in 2020!

We have 57 more students than last year!



# The team

Matthijs Vakar and Frank Staals (me) in the lectures

- ▶ Contact us through email
- ▶ We both speak Dutch

10 teaching assistants in the labs

- ▶ Most of them are Dutch speakers

Guest lecture at the end of the course



# Schedule

**Lectures:** twice per week

- ▶ Tuesday, 9.00 to 10.45
- ▶ Thursday, 13.15 to 15.00
- ▶ 15-minute break in the middle

**Practicals and Instructions:** twice per week

- ▶ Tuesday, 11.00 to 12.45 (online)
- ▶ Thursday, 17.15 to 19.00 (at USP)

You are expected to **work at home/library/café/...**



# Communication channels

<http://www.cs.uu.nl/docs/vakken/fp>

- ▶ All important information is found there
- ▶ Schedule, slides, assignments, exercises

## E-mail for important news

- ▶ Check your UU-mail regularly

## Teams

- ▶ Practicals and Instructions through Teams

## Blackboard

- ▶ As a means to access your grades.



# Resources

1. **Slides** contain most of the content
  - ▶ In some cases, supplemented by additional material
2. Pen-and-paper **exercises**
  - ▶ There's more than programming in this course
  - ▶ Ask questions during werkcollege sessions
  - ▶ Remember: there is **no compiler** at the exam
3. Book: **Programming in Haskell** (2nd edition) by Graham Hutton
  - ▶ The course follows it, except for chapters 13 and 17
  - ▶ More resources can be found in the website



# Midterm & Final Exam

- ▶ 'Pen-and-Paper' style exam questions
  - ▶ Closed book
  - ▶ No compiler





# Practical assignments

1. The first one helps you getting started
2. Three small ones with DOMJudge, one per week
3. One bigger project at the end



# DOMJudge assignments

- ▶ Submissions are **individual**
  - ▶ Do not plagiarize!
- ▶ Graded mostly automatically, almost instant output
  - ▶ P1, P3: correct = 10, not fully correct = 1
  - ▶ P2, correct = 6, remaining 4 points for style



# Style

- ▶ Hints in DOMJudge Automatic checks for good style
- ▶ Ask TAs for advice during practicals
- ▶ Important part of the final project grade



# Final project

Develop your own **game** in Haskell

- ▶ Work in **pairs** is allowed and recommended
- ▶ 80% of your grade for practicals
- ▶ Submission in two parts
  1. Preliminary design document
  2. Code of the project



# Optional assignment

Learn and explain a Haskell library or language feature

- ▶ Up to additional 0.5 points for the final grade
- ▶ Work in groups of at most three
- ▶ More details after mid-term exam



# Tools

- ▶ Haskell as a programming environment
  - ▶ We use GHC, the de facto standard compiler
  - ▶ More information later
- ▶ HLint to check style
- ▶ Two different systems for submission
  - ▶ **DOMJudge** for automatic grading
  - ▶ **Blackboard** for final project



# Rooms for instructions

- ▶ Double-check you assigned group in Blackboard!



# Grading

Linear combination of three grades

- ▶ **Theory**  $T = 0.3 \times \text{midterm} + 0.7 \times \text{final}$
- ▶ **Practical**  $P = 0.2 \times \text{DOMJudge} + 0.8 \times \text{final}$
- ▶ **Optional** assignment  $O$

**Final** grade  $F = 0.5 \times T + 0.5 \times P + 0.05 \times O$

To pass the course, you need

- ▶  $F \geq 5.5, T \geq 5, P \geq 5$
- ▶ Pass at least two DOMJudge assignments

All other cases are described in the website





# If you did the course last year

- ▶ **Resubmit** your DOMJudge assignments
- ▶ Redo the **final project**
  - ▶ Using the same code as last year is **not** allowed
- ▶ Redo **all** the **exams**



**Let's get started!**



**Universiteit Utrecht**

[Faculty of Science  
Information and Computing  
Sciences]