

# Questions & Answers

## Functional Programming 2020/2021



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# Format of the exam

## Similar to the previous exams in the web

- ▶ The exam is on Remindo
- ▶ Two types of questions
  - ▶ Open: explain something or write some code
  - ▶ Multiple choice: choose one answer
- ▶ You **cannot** bring any notes to the exam, nor can you use ghc/ghci/your favourite editor etc.
- ▶ You have to answer in English or Dutch



# Contents of the exam

## Everything until today

- ▶ Basic types: lists, tuples, numbers
- ▶ User-defined data types
- ▶ Define functions by pattern matching
- ▶ Recursion on lists and other data types
- ▶ Write functions using accumulators
- ▶ Define and use higher-order functions
- ▶ Write classes and instances
- ▶ Infer and check the type of an expression



# Contents of the exam

Do I need to know all the types by heart?

Writing and understanding type signatures is something you need to learn, and we need to test

- ▶ We expect you to know, or be able to deduce, the types of the functions:  
id, (.), const, flip, fst, snd, null, head, tail, (++), concat, foldr, foldl, map, filter, sum, all, max, min, any, elem, not, (&&), (||), zip, reverse, take, drop, and all the members of the type classes Show, Eq, Ord, Enum and Num.
- ▶ Some higher-order functions are **very** important
  - ▶ `map` :: (a -> b) -> [a] -> [b]
  - ▶ `filter` :: (a -> Bool) -> [a] -> [a]
  - ▶ `foldr` :: (a -> b -> b) -> b -> [a] -> b

In most cases you can deduce their type if you know what they do

- ▶ Unless specifically stated otherwise you can use these functions without defining them in your answers.



# Outcome of the exam

- ▶ You should expect your grades in about two weeks
- ▶ What happens if I fail the exam?
  - ▶ **Nothing**, your grade is the average with the final one
  - ▶ Remember,  $T = 0.3 \times \text{midterm} + 0.7 \times \text{final}$
  - ▶ **Reflect** on your mistakes and **act** to fix them



# Q&A session



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