

Project: text-sort with RB-Trees

FPROG – WS-24

Members:

- Luca Carpentieri
- Vladan Petkovic



Approach

- Dividing in three components:
 - Main.hs
 - Helperfunctions.hs
 - RBTREE.hs
- Tokenization
 - Everything to lowercase
 - Only letters (a-z) – punctuation marks removed
- Tree-creation
 - Balancing with every insertion-step
 - Colouring the root black at the end

Reflection on paradigms – OOP vs FP

- Structuring (with classes)
 - Data (as objects)
 - Functions (as object-property)
- Structuring (with context)
 - Data (as input/output)
 - Bild, Urbild
 - Functions (as “Abbildung”)

Lessons Learned

- Setup/Compile difficulty
- Failed optimization:
 - Tokenization
 - In parallel (for every line or dividing the content in 4 parts)
 - Sequential
 - Removing redundant balancing (not working)
- Pattern Matching, Guards, own Modules in Haskell
- Red Black Trees

```
Done!  
Time elapsed: 1.402 seconds
```

```
Done!  
Time elapsed: 1.534 seconds
```

Functional & “Non”-functional parts

- Non-functional parts in:
 - processFile(), main(), measureTimeOfFunction()
 - Mixing I/O with other functionality
 - Procedural approach (not entirely functional)