Project – WiSe 25/26
Detailed Information

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Goal of the Project

- In a group of 4 students you will:
  - Create exercises for
    - Dijkstra
    - BFS / DFS
    - Eulerian and Hamiltonian cycles and paths
  - Dynamic tasks with detailed feedback

Example I

The binary search algorithm is to be applied to the sorted list [1, 2, 7, 9, 10, 12, 14, 15, 16] to search for the element k=1.

Provide the values of mid assigned during the respective calls of Binary Search.

1. 1
2. 2
3. 3
4. 4

Feedback Example I

Ergebnis: 0%

- Incorrect. The first mid can be calculated as followed:

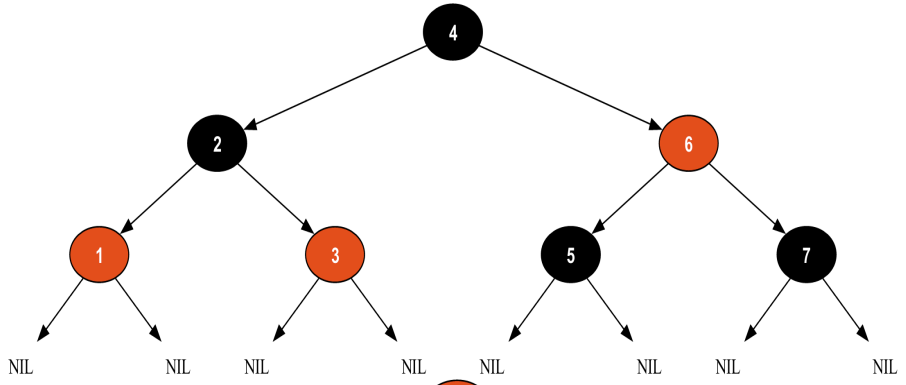
  mid = (left + right) // 2
  mid = (0 + 8) // 2
  mid = 4

  Solution:
  1. 4
  2. 1
  3. 0

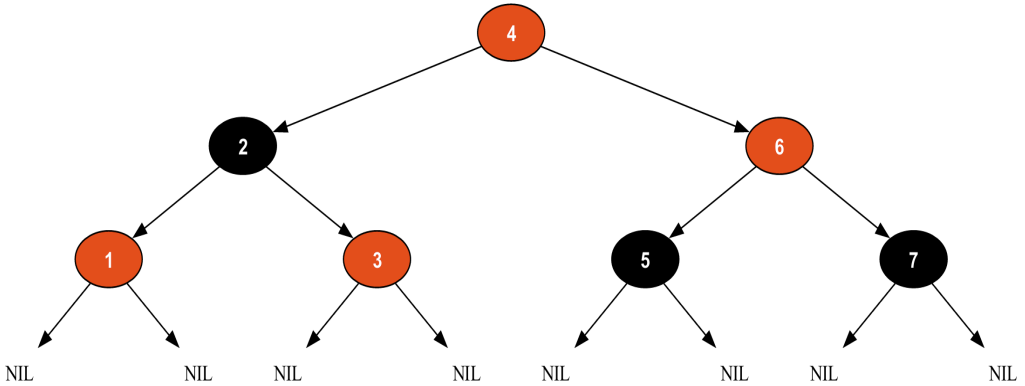
Example II

- Insert the sequence
  [6, 4, 2, 7, 1, 5, 3]
  into an initially empty red-black tree and draw the resulting red-black tree.

Correct solution:



Submitted by student:



Feedback Example II

- “Your solution does not fulfill the rule, that the root node in a red-black tree must be black, since the root with the value 4 is colored red in your submission. You likely just forgot to re-color it after correctly balancing. Everything else is correct.”

Important Criteria

- The exercises need to fulfill following criteria:
  - Align with the standards (see files)
  - Dynamic exercises
  - Detailed feedback
- Not meeting the requirements will negatively impact your final grade.

Milestones

- Total of 2 Milestones and 1 Final Presentation
- Submission via Mail:
  - Diary & Group Presentation **(every Milestone)**
  - Lessons Learned, Group Codebase **(only in Final Presentation)**
  - Deadline: the evening before the presentation

How to submit milestones

- Please submit via email.
- Content:
  - Diary_Lastname_Milestone#.pdf
- The diary should only have entries for the current milestone.

Milestone 1
Intermediate Results

- Intermediate Results
- Submit: Diary
- Submission Deadline: 29.10.25
- Presentation: 30.10.25

Milestone 2
Intermediate Results

- Intermediate Results
- Submit: Diary
- Submission Deadline: 26.11.25
- Presentation: 27.11.25

How to submit final results

- Please submit via email the entire content as zip file – structure:

```
final_submission_group_<ALGORITHM_NAME>.zip/
├── individual_submission_<LASTNAME>_<MATRICULATION_NO>/
│   ├── lessons_learned.pdf
│   ├── python_source_code.zip
│   ├── diaries/
│   │   ├── Diary_Lastname_Milestone1.pdf
│   │   ├── Diary_Lastname_Milestone2.pdf
│   │   └── Diary_Lastname_Final.pdf
│   └── exercises_<ALGORITHM_NAME>/
│       ├── Theoretical.zip
│       └── Practical.zip
├── ...
├── Add other team members too!
└── ...
```

Final Presentation

- Final Results
- Submit:
  - Code
  - Lessons Learned
  - Diary
- Submission Deadline: 7.12.25 11:59 pm
- Presentation: 11.12.25

Diary

- Individual submission! **NOT** group submission!
- Write down in detail what you did
- Essential for grading, since we cannot check who did what
- You do not have to track actual time, just what you did in which week
- **Without a detailed diary, we cannot grade you!**

Lessons Learned

- Rather short free-form document (approximately 1/2 page)
- Reflect on this project
- What have you learned?
- What went well?
- What could have been better?

Presentations

- Only Jack → No PPP!
- Each presentation should be 20 minutes
  - 5 minutes each

Additional Information

- If you face any problems that cannot be → Contact us via Mail!
- But keep in mind to:
  - Introduce yourself
  - Use a clear subject line
  - Give a detailed description of your problem
  - Always write both of us (cc)

Website:

https://jensliebehenschel.github.io/ADLT/