

Exam questions from SS2010

August 3, 2011

This document contains 2 out of 6 questions from the exam in Computer Science Theory I from SS2010.

Name: _____ Matriculation-Nr.: _____

Exercise 3 - AVL trees

[Points: 10]

Consider an empty AVL tree. Then

1. Insert the keys 10, 20, 30, 40, 50, 60, 35.
2. Delete the node 60.

Show the corresponding tree and specify all the rotations occurring during the insert and deletion processes.

Exercise 4 - Text Search/Edit

[Points: 5+5]

Consider two strings $A = PLANE$ and $B = LAND$.

1. Show the corresponding trace graph for transforming A into B . For each node draw only the feasible edges (i.e. edges that lead to the corresponding minimum value of the node).

		<i>P</i>	<i>L</i>	<i>A</i>	<i>N</i>	<i>E</i>	
		0	1	2	3	4	5
<i>L</i>	1						
<i>A</i>	2						
<i>N</i>	3						
<i>D</i>	4						

2. Mark an optimal trace (i.e. an optimal path in the trace graph).
3. Specify the corresponding sequence of edit operations and $D(A, B)$.