Christian Schindelhauer Freiburg, Nov 26, 2008

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Exercises

Algorithm theory

Winter term 2008/09

Exercise sheet 6

TASK 1 (1 point)**:**

Treaps

1. Sequentially insert the elements (i, 8), (j, 4), (k, 11), (h, 2) and (g, 5) into an initially empty Treap. For all intermediate stages, e.g after performing a rotation, illustrate the state of the Treap and specify the operation that leads to this state.

2. Let m be your immatriculation number and ℓ be your group letter. Insert $(\ell, m \bmod 11 + m \bmod 13 + m \bmod 17 + 0.5)$ into the Treap.

3. Delete the root of the Treap resulting from (2.). Again, illustrate the Treap prior to and after each rotation.

4. Merge the Treap resulting from (3.) and the Treap shown below. Illustrate all intermediate stages.