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HW 8

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1. Dictionary, augmented Red-Black Tree
2.
  1. Load-time =  $f - s$
  2. Sum of subtree signs
  3. Min-val – this will contain the minimum load-time of the subtree rooted at  $x$ 
    1. This will run in  $O(1)$ , when called at the root
  4. Sign
3. Using Theorem 14.1, when inserting or deleting a node, the only new fields that need to be updated are the ones on the path from the newly inserted node, through its parents, to the root. This length is at most  $O(\lg n)$ .
4. I am taking the 20% for this part. Unfortunately, I was not able to develop an algorithm.