Friday June 14th 2024.

CS240 Tutorial 6

1. **Skip List Expected Height**
   Give a proof that the expected height of a skip list with n items is in $O(\log(n))$.
2. **Modified AVL Height**
   Consider a modified version of an AVL tree called an AVL-2 Tree where we guarantee that for every node z in the tree that $|\text{height(z.left)} - \text{height(z.right)}| \leq 2$. Prove that the height of an AVL-2 tree is in $O(\log(n))$
3. **Always Rebalancing**
   Show that arbitrarily large AVL trees may require rotation at every node on the path to the root after deletion.