6.851 Advanced Data Structures (Spring'10)

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Problem 9 Sample Solutions

Dynamic partition of [n] into intervals. If we choose **name**(x) to be the largest number in the interval, we can easily solve this problem using a vEB tree. To answer **name**(x) we query vEB for **succ**(x), to perform **merge**(x) we delete **name**(x) from the vEB, and we perform **divide**(x) by inserting x to the vEB.

This way, all operations work on $O(\log \log n)$ time.

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