

Alien Microwave

- We may count non-Error-Prone times, which are the numbers that are still valid after *any* one of its digits is removed.
- It can be observed that for any consecutive four digits **a,b,c,d**, where **ab** belongs to a same time partition $t(i)$, and **cd** belongs to a same time partition $t(i+1)$, (aka $|ab|cd|$), we must have:
 - Deleting **c** gives $|_a|bd|$, $bd < t(i+1)$
 - Deleting **d** gives $|_a|bc|$, $bc < t(i+1)$
- Use dynamic programming to enumerate digits **ab** ($ab < t(i)$) from the least significant time partition to the most significant.
- The DP state saves the count of (partial) non-Error-Prone times, and keeps track of the previous two digits in the time partition on the right.
- Time: $O(t^2n)$, $t \leq 100$, $n \leq 9$