

## DP algorithm to determine if $x \in L$ , continued

If the length of  $x$  is at most 2, we return *True* if and only if  $x \in \{1, 10\}$ .

For all other strings  $x$ , we will compute an array  $M[1\dots n]$  where  $n$  is the length of  $x$ , and where

$$M[i] = \textit{True} \text{ if and only if } x[1\dots i] \in L.$$

We will then return  $M[n]$ !

Basic challenge: how shall we calculate the array  $M$ ?