Quiz 5 Solution.

2. There are 2 cases:

① Last digit is 1

Then whenever there is no "00" in the first $n-1$ digits, there won't be a "00" in the string.

② Last digit is 0

Then the $(n-1)^{th}$ digit must be 1. And whenever there is no "00" in the first $n-2$ digits, there won't be a "00" in the string.

$a_n = a_{n-1} + a_{n-2}$ $\quad n \geq 2$.

Base cases: $a_1 = 2$ $\quad (0, 1)$

$a_2 = 3$ $\quad (01, 10, 11)$