N drivers $p_{accident} = 0.01$ payoff = 50K$

SOLUTION:

- repeat M times
  - for each driver
    - ↳ generate a random number out of uniform distribution $p \in [0,1]$
    - ↳ Check if $p < 0.01$
      - ↳ yes: (the driver had accident) $Na = Na + 1$
  - repeat for each driver.

$$\overline{Na} = \frac{Na^{(1)} + Na^{(2)} + \dots + Na^{(M)}}{M}$$

$$STD(Na) = \dots \sqrt{\frac{\sum_{i=1}^{M} (Na^{(i)} - \overline{Na})^2}{M-1}}$$

$$\bar{V} = \overline{Na} + 2 \cdot STD(Na)$$

Total Payoff $= \bar{V} \cdot 50K\$$

$$\text{premium} = \frac{\text{Total Payoff}}{N} = \frac{\bar{V} \cdot 50\$K\$}{N}$$