length of longest path
simple (without cycles)
rest. placement

\[ m_0 = \infty \]
\[ p_0 = 0 \]

\[ p_1, p_2, p_3, \ldots, p_n \]

\[ k \text{ dist apart} \]

subproblem

best placement for 1 \ldots i

\[ m_i \]

\[ m_{i+1} \]

\[ p_1, p_2 \]

\[ p_{i-1}, p_i \]

\[ P_i \]

where are \( P_i \) placed at location \( i \)

\[ RPI[i] = \max \text{ profit for first } i \text{ locations} \]

where are placed at location \( i \)
\[ RPL_i = \begin{cases} 0 \\ R_i + \max \{ RPL_j \mid 0 \leq j < i, m_i - n_j \geq k \} \end{cases} \]

choose best previous location