dp优化-矩阵快速幂

$$假设转移方程：f_i=\sum_{j=1}^{n} w_j f_{i-j},则：$$

$$f_{(0,i)}=\sum_{j=1}^{n} w_{(0,j)} f_{(j,i)},即矩阵乘法形式$$

$$不难构造出以下两种矩阵相乘的形式：$$

$$B=B*A形式$$

$$\begin{vmatrix} f_{i-1} & f_{i-2} & f_{i-3}) & \dots & f_{i-n} \\ 0 & 0 & 0 & \dots & 0 \\ \vdots & \vdots & \vdots & \ddots & \\ 0 & 0 & 0 & \dots & 0 \end{vmatrix} * \begin{vmatrix} w_1 & 1 & 0 & 0 & \dots & 0 \\ w_2 & 0 & 1 & 0 & \dots & 0 \\ w_3 & 0 & 0 & 1 & \dots & 0 \\ \vdots & \vdots & \vdots & \vdots & \ddots & \\ w_n & 0 & 0 & 0 & \dots & 1 \end{vmatrix} = \begin{vmatrix} f_i & f_{i-1} & f_{i-2} & \dots & f_{i-n+1} \\ 0 & 0 & 0 & \dots & 0 \\ \vdots & \vdots & \vdots & \ddots & \\ 0 & 0 & 0 & \dots & 0 \end{vmatrix}$$

$$B=A*B形式$$

$$\begin{vmatrix} w_1 & w_2 & \dots & w_n \\ 1 & 0 & \dots & 0 \\ 0 & 1 & \dots & 0 \\ \vdots & \vdots & \ddots & \\ 0 & 0 & \dots & 1 \end{vmatrix} * \begin{vmatrix} f_{i-1} & 0 & \dots & 0 \\ f_{i-2} & 0 & \dots & 0 \\ \vdots & \vdots & \ddots & \\ f_{i-n} & 0 & \dots & 0 \end{vmatrix} = \begin{vmatrix} f_i & 0 & \dots & 0 \\ f_{i-1} & 0 & \dots & 0 \\ \vdots & \vdots & \ddots & \\ f_{i-n+1} & 0 & \dots & 0 \end{vmatrix}$$