Recursive Formulation

- Define $t[i,j]$ as weight of trangulation for polynomial $P_{i\ldots j} = \langle v_{i-1}, v_i, \ldots, v_j \rangle$.
- Basis: $t[i,i] = 0$. A two vertex polygon $P_{i\ldots i} = \langle v_{i-1}, v_i \rangle$.
- When $j - i \geq 1$ we have at least a three vertex polygon.
- We wish to minimize the weights

$$\triangle v_{i-1} v_k v_j + \mathbf{T}(P_{i-1\ldots k}) + \mathbf{T}(P_{k+1\ldots j})$$

over all vertices v_k where $k = i, i+1, \ldots, j-1$.

- Thus recursive formulation is

$$t[i,j] = \begin{cases} 0 & \text{if } i = j \\ \min\limits_{i \leq k \leq j-1} \{t[i,k] + t[k+1,j] + w(\triangle v_{i-1} v_k v_j) & \text{if } i < j \end{cases}$$