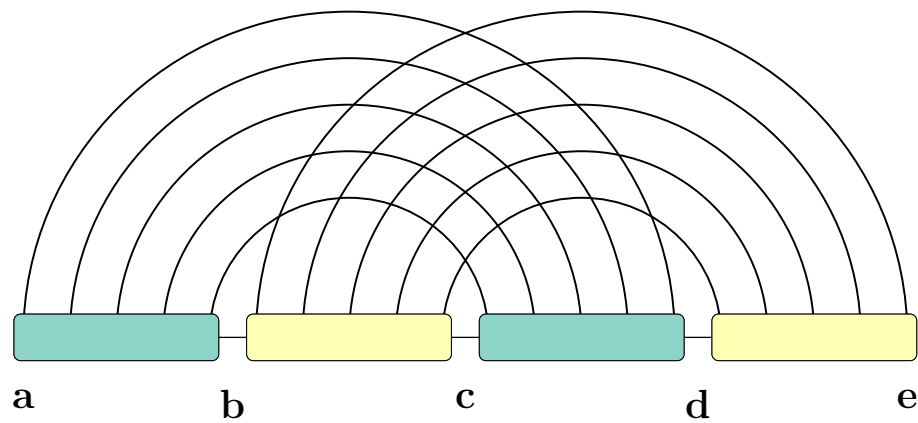


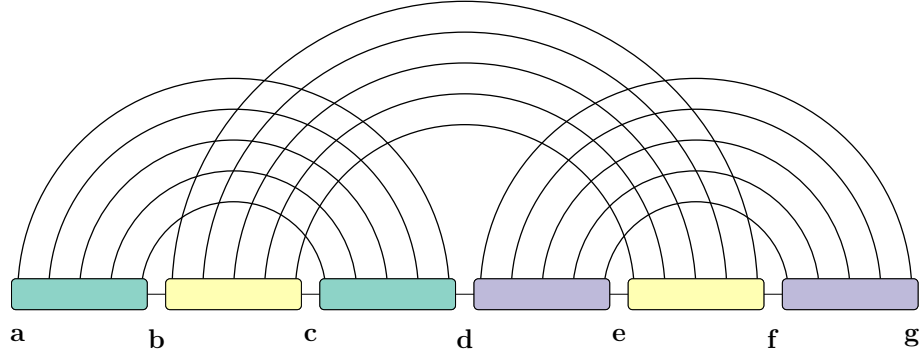
fatgraph name: H



first and last anchors, already given: a, e

$$A = \min_{a,b,c,d,e} \left(C_{\text{yellow}}[b, c - 1, d, e - 1] + C_{\text{teal}}[a, b - 1, c, d - 1] \right)$$

fatgraph name: **K**



first and last anchors, already given: a, g

$$A = \min_{a,d,g} \left(\textcolor{teal}{B}[a, d|d, g] \right)$$

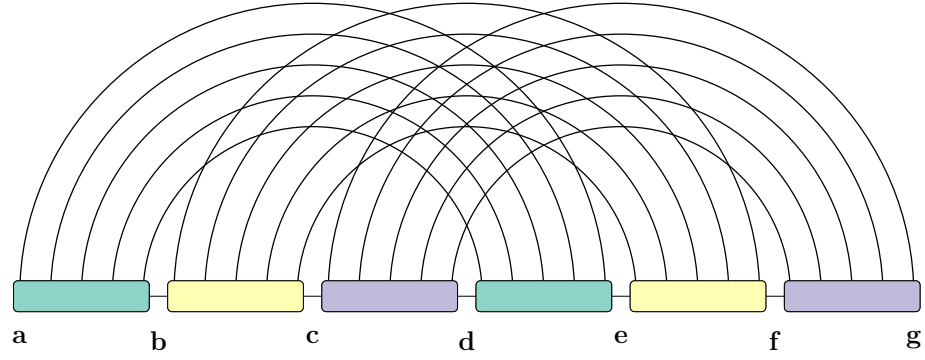
$$\textcolor{teal}{B}'[a, d|d', g] = \min \begin{cases} \textcolor{teal}{B}'[a, d-1|d', g], & \text{if } d-1, \notin \{a, d', g\} \\ \textcolor{teal}{B}[a+1, d-1|d', g] + \Delta G(a, d) & \text{if } \{a+1, d-1\} \cap \{d', g\} = \emptyset \end{cases}$$

$$\textcolor{teal}{B}[a, d|d', g] = \min \begin{cases} \textcolor{teal}{B}[a+1, d|d', g], & \text{if } a+1 \notin \{d, d', g\} \\ \textcolor{teal}{B}'[a, d-1|d', g], & \text{if } d-1, \notin \{a, d', g\} \\ \textcolor{teal}{B}[a+1, d-1|d', g] + \Delta G(a, d) & \text{if } \{a+1, d-1\} \cap \{d', g\} = \emptyset, \\ \textcolor{purple}{C}'[d', g|a, d] \end{cases}$$

$$\textcolor{purple}{C}'[d, g|b, c] = \min \begin{cases} \textcolor{purple}{C}'[d, g-1|b, c], & \text{if } g-1, \notin \{d, b, c\} \\ \textcolor{purple}{C}[d+1, g-1|b, c] + \Delta G(d, g) & \text{if } \{d+1, g-1\} \cap \{b, c\} = \emptyset \end{cases}$$

$$\textcolor{purple}{C}[d, g|b, c] = \min \begin{cases} \textcolor{purple}{C}[d+1, g|b, c], & \text{if } d+1 \notin \{g, b, c\} \\ \textcolor{purple}{C}'[d, g-1|b, c], & \text{if } g-1, \notin \{d, b, c\} \\ \textcolor{purple}{C}[d+1, g-1|b, c] + \Delta G(d, g) & \text{if } \{d+1, g-1\} \cap \{b, c\} = \emptyset, \\ \textcolor{yellow}{C}_{\boxtimes}'[b, c-1, d, g+1-1] \end{cases}$$

fatgraph name: **L**

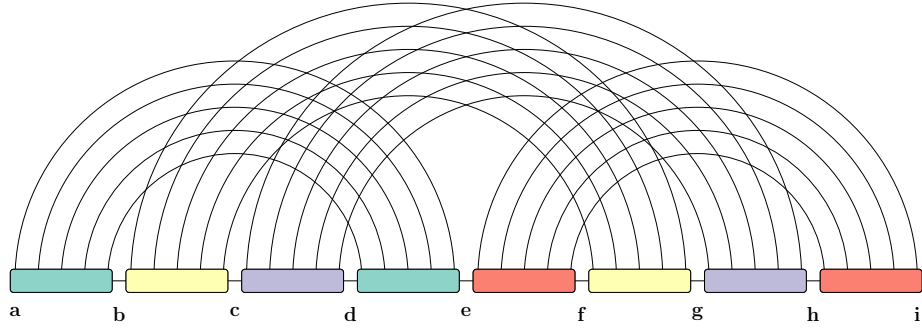


first and last anchors, already given: a, g

$$A = \min_{a, c, d, f, g} \left(B[a, c, d, f] + C_{\boxtimes} [c, d - 1, f, g - 1] \right)$$

$$B[a, c, d, f] = \min_{b, e} \left(C_{\boxtimes} [b, c - 1, e, f - 1] + C_{\boxtimes} [a, b - 1, d, e - 1] \right)$$

fatgraph name: M



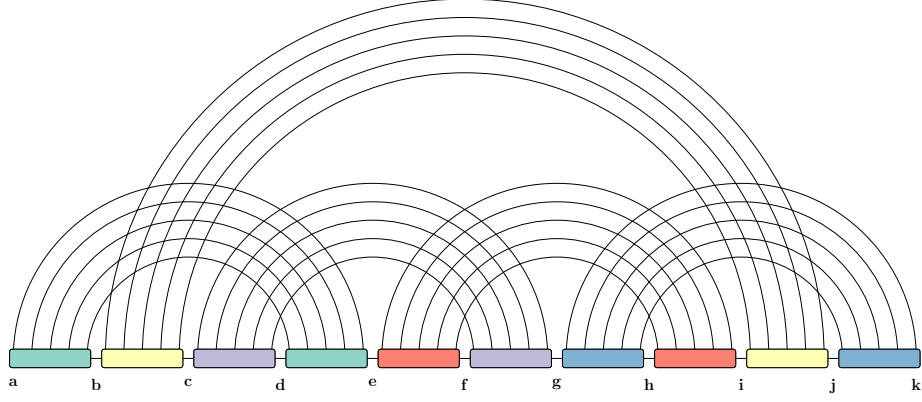
first and last anchors, already given: a, i

$$A = \min_{a,e,f,h,i} \left(B[a, e, f, h] + \text{red box } [e, f - 1, h, i - 1] \right)$$

$$B[a, e, f, h] = \min_{b,d} \left(\text{teal box } [a, b - 1, d, e - 1] + C[b, d, f, h] \right)$$

$$C[b, d, f, h] = \min_{c,g} \left(\text{purple box } [c, d - 1, g, h - 1] + \text{yellow box } [b, c - 1, f, g - 1] \right)$$

fatgraph name: C5



first and last anchors, already given: a, k

$$A = \min_{a,g,h,j,k} \left(B[a, g, h, j] + \boxed{C_{\boxtimes}}[g, h-1, j, k-1] \right)$$

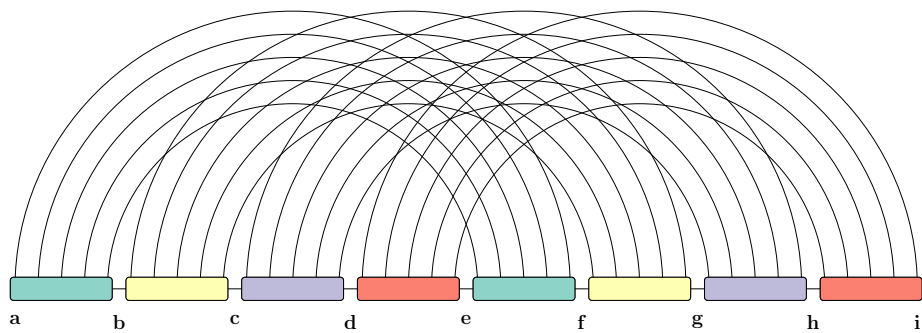
$$B[a, g, h, j] = \min_{e,f,i} \left(\boxed{C_{\boxtimes}}[e, f-1, h, i-1] + \boxed{C}[a, e|f, g, i, j] \right)$$

$$\boxed{C}'[a, e|f, g, i, j] = \min \begin{cases} \boxed{C}'[a, e-1|f, g, i, j], & \text{if } e-1, \notin \{a, f, g, i, j\} \\ \boxed{C}[a+1, e-1|f, g, i, j] + \Delta G(a, e) & \text{if } \{a+1, e-1\} \cap \{f, g, i, j\} = \emptyset \end{cases}$$

$$\boxed{C}[a, e|f, g, i, j] = \min \begin{cases} \boxed{C}[a+1, e|f, g, i, j], & \text{if } a+1 \notin \{e, f, g, i, j\} \\ \boxed{C}'[a, e-1|f, g, i, j], & \text{if } e-1, \notin \{a, f, g, i, j\} \\ \boxed{C}[a+1, e-1|f, g, i, j] + \Delta G(a, e) & \text{if } \{a+1, e-1\} \cap \{f, g, i, j\} = \emptyset, \\ D'[a, e+1, f, g, i, j] \end{cases}$$

$$D[b, d, f, g, i, j] = \min_c \left(\boxed{C_{\boxtimes}}[c, d-1, f, g-1] + \boxed{C_{\boxtimes}}[b, c-1, i, j-1] \right)$$

fatgraph name: K4



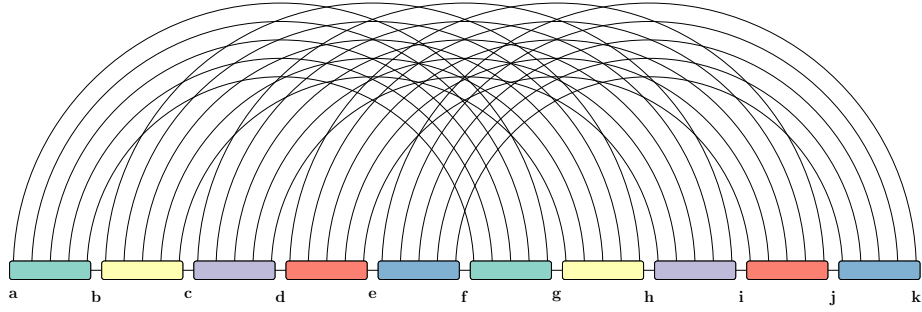
first and last anchors, already given: a, i

$$A = \min_{a,d,e,h,i} \left(B[a, d, e, h] + \text{red box } C_{\boxtimes}[d, e-1, h, i-1] \right)$$

$$B[a, d, e, h] = \min_{c,g} \left(C[a, c, e, g] + \text{purple box } C_{\boxtimes}[c, d-1, g, h-1] \right)$$

$$C[a, c, e, g] = \min_{b,f} \left(\text{yellow box } C_{\boxtimes}[b, c-1, f, g-1] + \text{teal box } C_{\boxtimes}[a, b-1, e, f-1] \right)$$

fatgraph name: K5



first and last anchors, already given: a, k

$$A = \min_{a,e,f,j,k} \left(B[a, e, f, j] + \text{C}_{\text{blue}}[e, f - 1, j, k - 1] \right)$$

$$B[a, e, f, j] = \min_{d,i} \left(C[a, d, f, i] + \text{C}_{\text{red}}[d, e - 1, i, j - 1] \right)$$

$$C[a, d, f, i] = \min_{b,g} \left(D[b, d, g, i] + \text{C}_{\text{teal}}[a, b - 1, f, g - 1] \right)$$

$$D[b, d, g, i] = \min_{c,h} \left(\text{C}_{\text{purple}}[c, d - 1, h, i - 1] + \text{C}_{\text{yellow}}[b, c - 1, g, h - 1] \right)$$