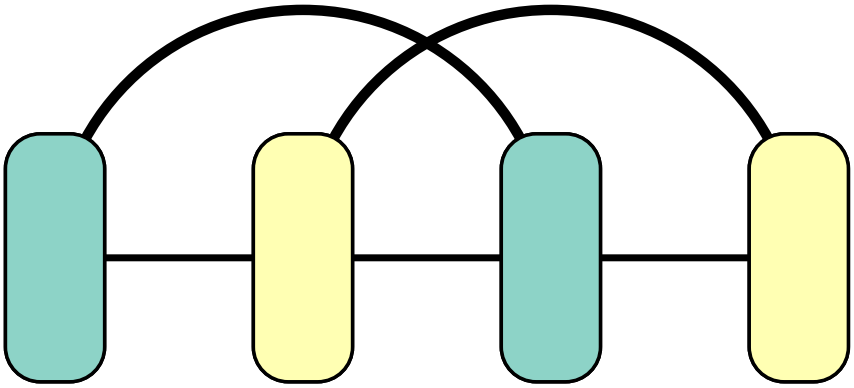
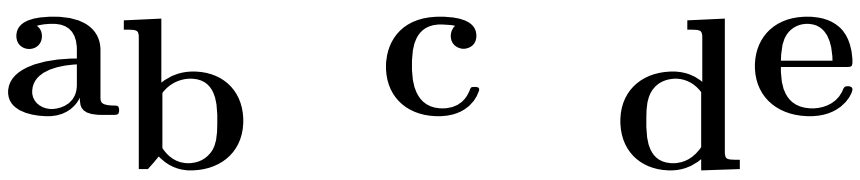
fatgraph name: H





first and last anchors, already given: a, h

$$A = \min\left(B\left[\right]\right)$$

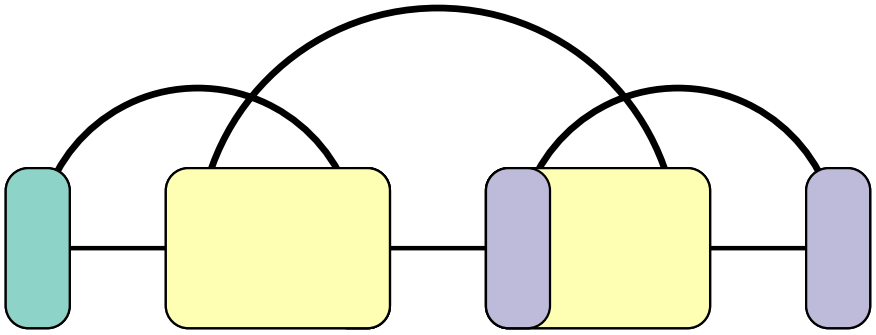
$$B = \min_{a,c,d,f,h}\Big(D\left[a, f|c, d\right] + C\left[c, d, f, h\right]\Big)$$

$$C\left[c, d, f, h\right] = \min_{g}\Big(C_{\boxtimes}\left[c, d-1, g, h-1\right]\Big)$$

$$D'\left[a, f|c, d\right] = \min\begin{cases} D'\left[a, f-1|c, d\right], & \text{if } f-1, \notin \{a, c, d\} \\ D\left[a+1, f-1|c, d\right] + \Delta G(a, f) & \text{if } \{a+1, f-1\} \cap \{c, d\} = \emptyset \end{cases}$$

$$D\left[a, f|c, d\right] = \min\begin{cases} D\left[a+1, f|c, d\right], & \text{if } a+1 \notin \{f, c, d\} \\ D'\left[a, f-1|c, d\right], & \text{if } f-1, \notin \{a, c, d\} \\ D\left[a+1, f-1|c, d\right] + \Delta G(a, f) & \text{if } \{a+1, f-1\} \cap \{c, d\} = \emptyset \end{cases}$$

fatgraph name: K



a b c d e f g

first and last anchors, already given: a, h

$$A = \min\left(B\,[]\right)$$

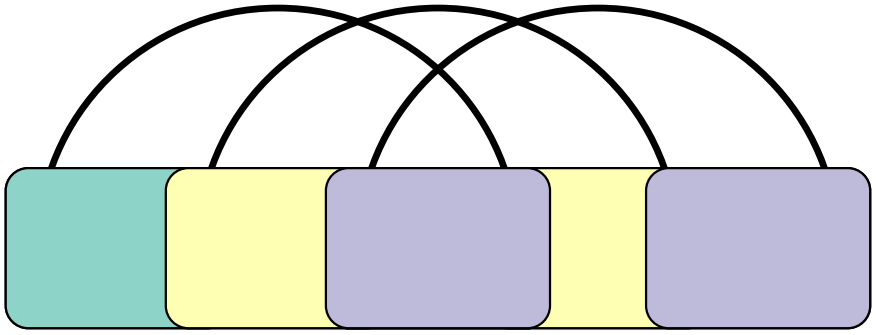
$$B = \min_{a,c,d,f,h}\Big(D\,[a,f|c,d] + C\,[c,d,f,h]\Big)$$

$$C\,[c,d,f,h] = \min_{g}\Big(C_{\boxtimes}\,[c,d-1,g,h-1]\Big)$$

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

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

fatgraph name: L



first and last anchors, already given: a, l

$$A = \min\left(B\left[\right]\right)$$

$$B = \min_{a,b,d,g,h,k}\Big(F\left[a,d,g,k\right] + C\left[b,d,h,k\right] + C_{\boxtimes}\left[a,b-1,g,h-1\right]\Big)$$

$$C\left[b,d,h,k\right] = \min_{c}\left(D\left[c,d,h,k\right]\right)$$

$$D\left[c,d,h,k\right] = \min_{j}\left(E\left[c,d,h,j\right]\right)$$

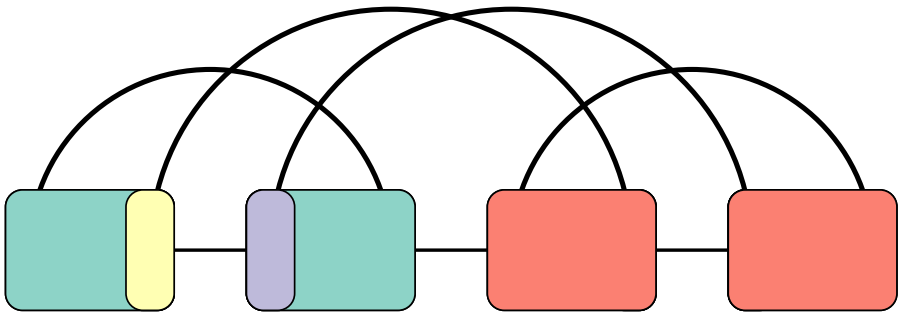
$$E\left[c,d,h,j\right] = \min_{i}\Big(C_{\boxtimes}\left[c,d-1,i,j-1\right]\Big)$$

$$F\left[a,d,g,k\right] = \min_{f}\left(G\left[a,d,f,k\right]\right)$$

$$G\left[a,d,f,k\right] = \min_{l}\left(H\left[d,f,k,l\right]\right)$$

$$H\left[d,f,k,l\right] = \min_{e}\Big(C_{\boxtimes}\left[e,f-1,k,l-1\right]\Big)$$

fatgraph name: M



a b c d e f g h i

first and last anchors, already given: a, l

$$A = \min\left(B\left[\right]\right)$$

$$B = \min_{a,b,d,g,h,k}\left(F\left[a,d,g,k\right] + C\left[b,d,h,k\right] + C_{\boxtimes}\left[a,b-1,g,h-1\right]\right)$$

$$C\left[b,d,h,k\right] = \min_{c}\left(D\left[c,d,h,k\right]\right)$$

$$D\left[c,d,h,k\right] = \min_{j}\left(E\left[c,d,h,j\right]\right)$$

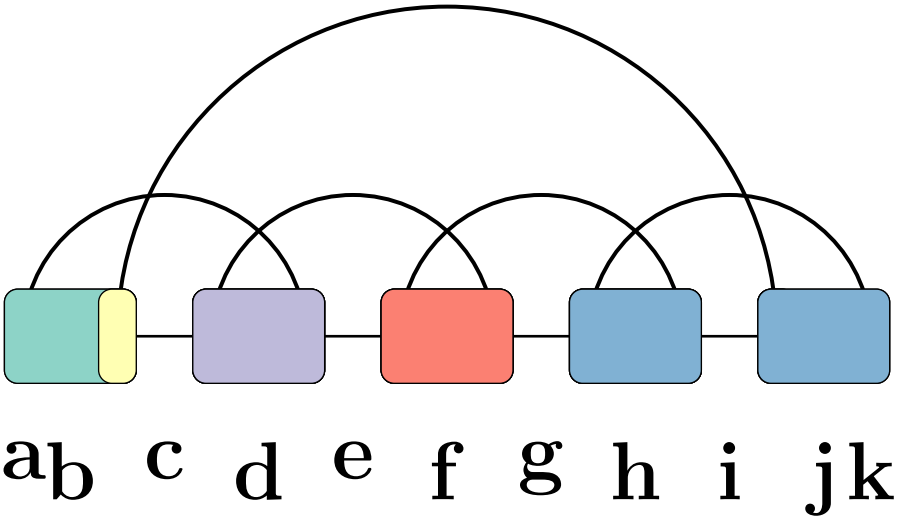
$$E\left[c,d,h,j\right] = \min_{i}\left(C_{\boxtimes}\left[c,d-1,i,j-1\right]\right)$$

$$F\left[a,d,g,k\right] = \min_{f}\left(G\left[a,d,f,k\right]\right)$$

$$G\left[a,d,f,k\right] = \min_{l}\left(H\left[d,f,k,l\right]\right)$$

$$H\left[d,f,k,l\right] = \min_{e}\left(C_{\boxtimes}\left[e,f-1,k,l-1\right]\right)$$

fatgraph name: C5



first and last anchors, already given: a, l

$$A = \min\left(B\left[\right]\right)$$

$$B = \min_{a,c,f,h,l}\left(G\left[a,h|c,f\right] + C\left[c,l|f,h\right]\right)$$

$$C'\left[c,l|f,h\right] = \min\begin{cases} C'\left[c+1,l|f,h\right], & \text{if } c+1 \notin \{l,f,h\} \\ C\left[c+1,l-1|f,h\right] + \Delta G(c,l) & \text{if } \{c+1,l-1\} \cap \{f,h\} = \emptyset \end{cases}$$

$$C\left[c,l|f,h\right] = \min\begin{cases} C\left[c,l-1|f,h\right], & \text{if } l-1, \notin \{c,f,h\} \\ C'\left[c+1,l|f,h\right], & \text{if } c+1 \notin \{l,f,h\} \\ C\left[c+1,l-1|f,h\right] + \Delta G(c,l) & \text{if } \{c+1,l-1\} \cap \{f,h\} = \emptyset \end{cases}$$

$$D\left[d,f,h,k\right] = \min_{j}\left(E\left[d,f,h,j\right]\right)$$

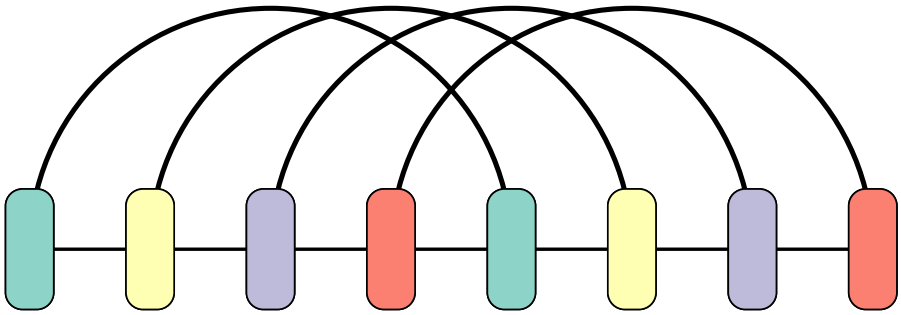
$$E\left[d,f,h,j\right] = \min_{e}\left(F\left[e,f,h,j\right]\right)$$

$$F\left[e,f,h,j\right] = \min_{i}\left(C_{\boxtimes}\left[e,f-1,i,j-1\right]\right)$$

$$G'\left[a,h|c,f\right] = \min\begin{cases} G'\left[a,h-1|c,f\right], & \text{if } h-1, \notin \{a,c,f\} \\ G\left[a+1,h-1|c,f\right] + \Delta G(a,h) & \text{if } \{a+1,h-1\} \cap \{c,f\} = \emptyset \end{cases}$$

$$G\left[a,h|c,f\right] = \min\begin{cases} G\left[a+1,h|c,f\right], & \text{if } a+1 \notin \{h,c,f\} \\ G'\left[a,h-1|c,f\right], & \text{if } h-1, \notin \{a,c,f\} \\ G\left[a+1,h-1|c,f\right] + \Delta G(a,h) & \text{if } \{a+1,h-1\} \cap \{c,f\} = \emptyset \end{cases}$$

fatgraph name: K4



first and last anchors, already given: a, p

$$A = \min\left(B\left[\right]\right)$$

$$B = \min_{a,c,e,h,j,m}\left(I\left[a,c,h,j\right] + F\left[c,e,j,m\right] + C\left[a,e,h,m\right]\right)$$

$$C\left[a,e,h,m\right] = \min_{f,n}\left(C_{\boxtimes}\left[e,f-1,m,n-1\right] + D\left[a,f,h,n\right]\right)$$

$$D\left[a,f,h,n\right] = \min_{o}\left(E\left[h,o|a,f\right]\right)$$

$$E'\left[h,o|a,f\right] = \min\begin{cases} E'\left[h-1,o|a,f\right], & \text{if } h-1 \notin \{o,a,f\} \\ E\left[h-1,o+1|a,f\right] + \Delta G(h,o) & \text{if } \{h-1,o+1\} \cap \{a,f\} = \emptyset \end{cases}$$

$$E\left[h,o|a,f\right] = \min\begin{cases} E\left[h,o+1|a,f\right], & \text{if } o+1, \notin \{h,a,f\} \\ E'\left[h-1,o|a,f\right], & \text{if } h-1 \notin \{o,a,f\} \\ E\left[h-1,o+1|a,f\right] + \Delta G(h,o) & \text{if } \{h-1,o+1\} \cap \{a,f\} = \emptyset \end{cases}$$

$$F\left[c,e,j,m\right] = \min_{l}\left(G\left[c,e,j,l\right]\right)$$

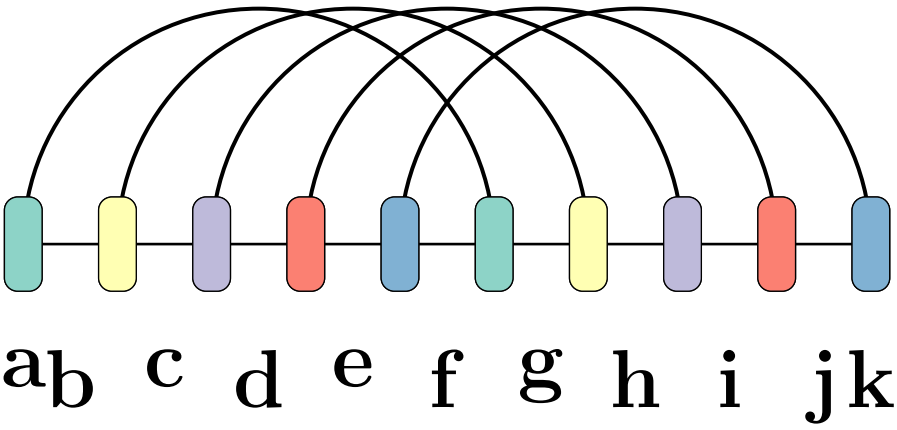
$$G\left[c,e,j,l\right] = \min_{d}\left(H\left[c,d,j,l\right]\right)$$

$$H\left[c,d,j,l\right] = \min_{k}\left(C_{\boxtimes}\left[c,d-1,k,l-1\right]\right)$$

$$I\left[a,c,h,j\right] = \min_{i}\left(J\left[a,c,i,j\right]\right)$$

$$J\left[a,c,i,j\right] = \min_{b}\left(C_{\boxtimes}\left[a,b-1,i,j-1\right]\right)$$

fatgraph name: K5



first and last anchors, already given: a, t

$$A = \min\left(B\left[\right]\right)$$

$$B = \min_{a,c,g,j,l,q}\Big(L\left[a,l|c,j\right] + G\left[c,g,l,q\right] + C\left[a,g,j,q\right]\Big)$$

$$C\left[a,g,j,q\right] = \min_{h,r}\Big(C_{\boxtimes}\left[g,h-1,q,r-1\right] + D\left[a,h,j,r\right]\Big)$$

$$D\left[a,h,j,r\right] = \min_{i}\left(E\left[a,i,j,r\right]\right)$$

$$E\left[a,i,j,r\right] = \min_{t}\left(F\left[i,j,r,t\right]\right)$$

$$F\left[i,j,r,t\right] = \min_{s}\Big(C_{\boxtimes}\left[i,j-1,s,t-1\right]\Big)$$

$$G\left[c,g,l,q\right] = \min_{d,n}\left(I\left[d,g,n,q\right] + H\left[c,d,l,n\right]\right)$$

$$H\left[c,d,l,n\right] = \min_{m}\Big(C_{\boxtimes}\left[c,d-1,m,n-1\right]\Big)$$

$$I\left[d,g,n,q\right] = \min_{p}\left(J\left[d,g,n,p\right]\right)$$

$$J\left[d,g,n,p\right] = \min_{e}\Big(K\left[e,p|g,n\right]\Big)$$

$$K'\left[e,p|g,n\right] = \min\begin{cases} K'\left[e,p-1|g,n\right], & \text{if } p-1, \notin \{e,g,n\} \\ K\left[e+1,p-1|g,n\right] + \Delta G(e,p) & \text{if } \{e+1,p-1\} \cap \{g,n\} = \emptyset \end{cases}$$

$$K[e,p|g,n] = \min \begin{cases} K[e+1,p|g,n], & \text{if } e+1 \notin \{p,g,n\} \\ K'[e,p-1|g,n], & \text{if } p-1, \notin \{e,g,n\} \\ K[e+1,p-1|g,n] + \Delta G(e,p) & \text{if } \{e+1,p-1\} \cap \{g,n\} = \emptyset \end{cases}$$

$$L'[a,l|c,j] = \min \begin{cases} L'[a+1,l|c,j], & \text{if } a+1 \notin \{l,c,j\} \\ L[a+1,l-1|c,j] + \Delta G(a,l) & \text{if } \{a+1,l-1\} \cap \{c,j\} = \emptyset \end{cases}$$

$$L[a,l|c,j] = \min \begin{cases} L[a,l-1|c,j], & \text{if } l-1, \notin \{a,c,j\} \\ L'[a+1,l|c,j], & \text{if } a+1 \notin \{l,c,j\} \\ L[a+1,l-1|c,j] + \Delta G(a,l) & \text{if } \{a+1,l-1\} \cap \{c,j\} = \emptyset \end{cases}$$