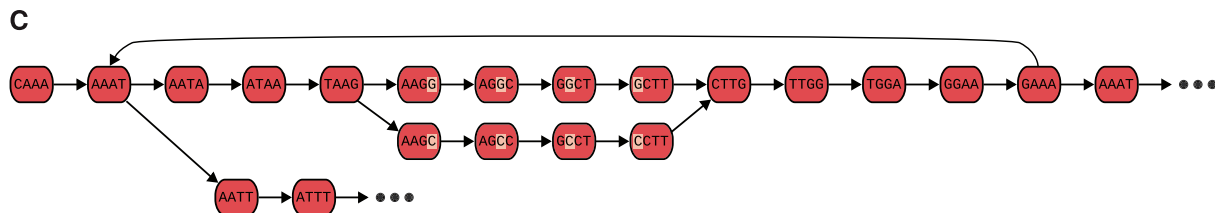


A Haplotype 1 CAAATAAGGCTTGAAATTTACCCGCTCCTGCCCGCGCTCTGGAGTTCACCCGCTCCTGCCCGCGTATTATATTCCAACCTCTCTG
 Haplotype 2 CAAATAAGCTTGAAATTTACCCGCTCCTGCCCGCGCTCTGGAGTTCATTATATTCCAACCTCTCTG
 Haplotype 3 CAAATAAGGCTTGAAATTTACCCGCTCCTGCCCGCGCTCTGGAGTTCATTATATTACAACCTCTCTG

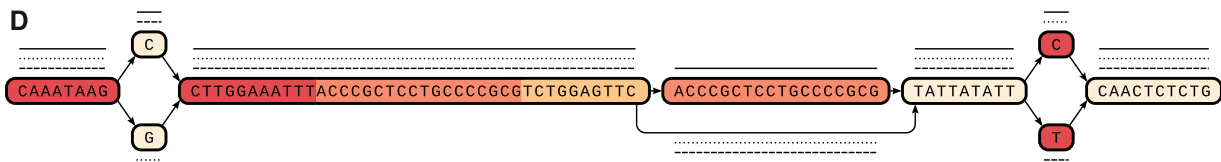
Unaligned sequences

B Haplotype 1 CAAATAAGGCTTGAAATTTACCCGCTCCTGCCCGCGCTCTGGAGTTCACCCGCTCCTGCCCGCGTATTATATTCCAACCTCTCTG
 Haplotype 2 CAAATAAGCTTGAAATTTACCCGCTCCTGCCCGCGCTCTGGAGTTC-----TATTATATTCCAACCTCTCTG
 Haplotype 3 CAAATAAGGCTTGAAATTTACCCGCTCCTGCCCGCGCTCTGGAGTTC-----TATTATATTACAACCTCTCTG

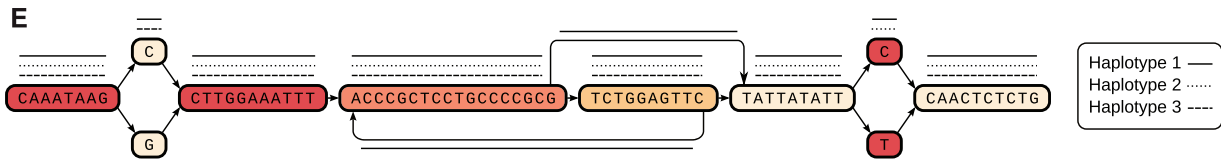
Multiple sequence alignment



De Bruijn graph



Acyclic sequence graph



Cyclic sequence graph