

Genome Assembly

Lecture 23
Oct 26, 2016

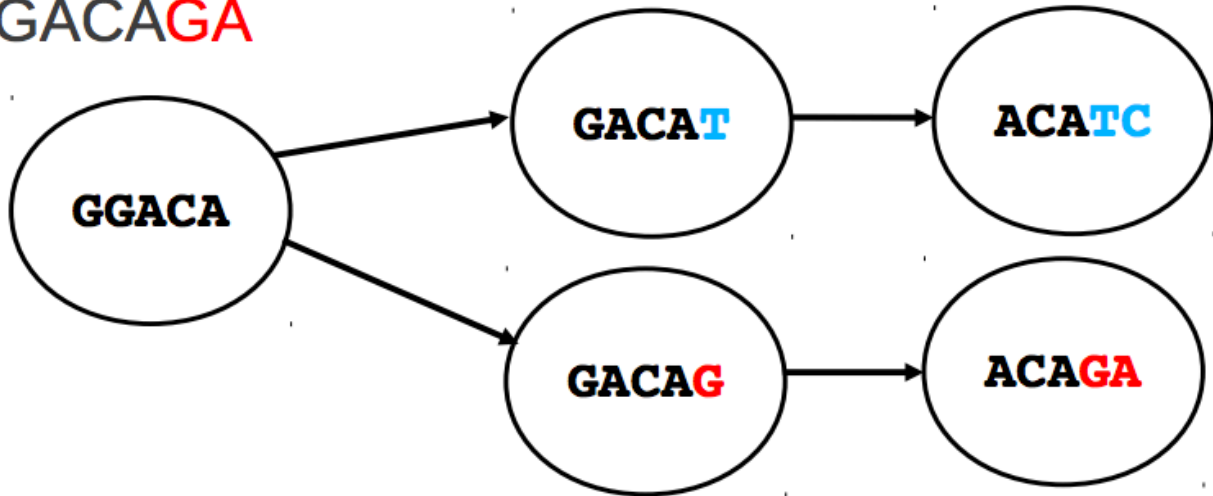
Announcements

ASSEMBLY

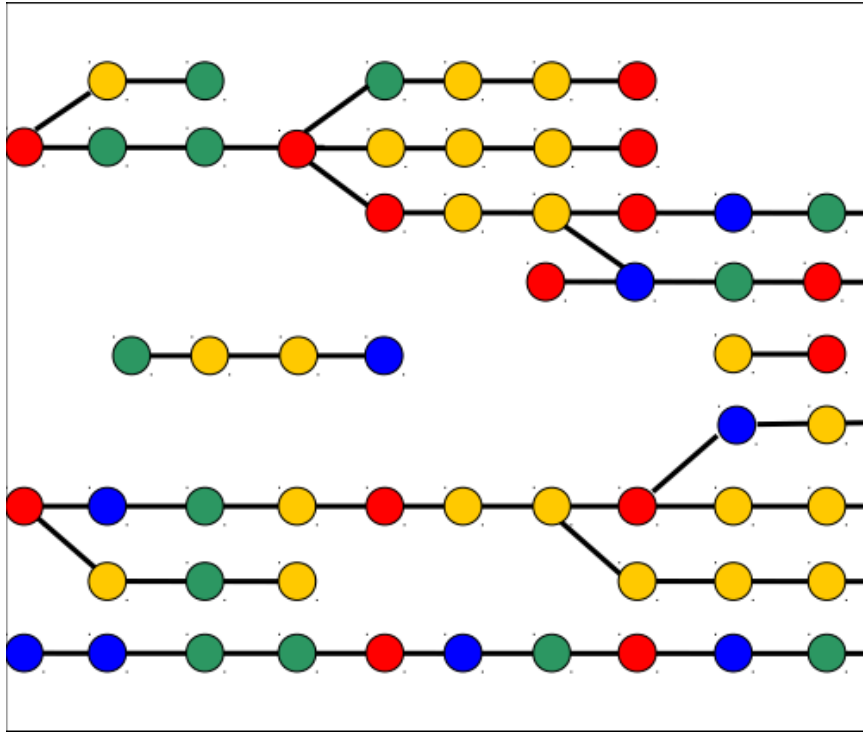
https://youtu.be/_x4IVlsw_q4?list=PLQ-85IQIPqFNGdaeGpV8dPEeSm3AChb6L

ASSEMBLY – MORE COMPLEX DE BRUIJN

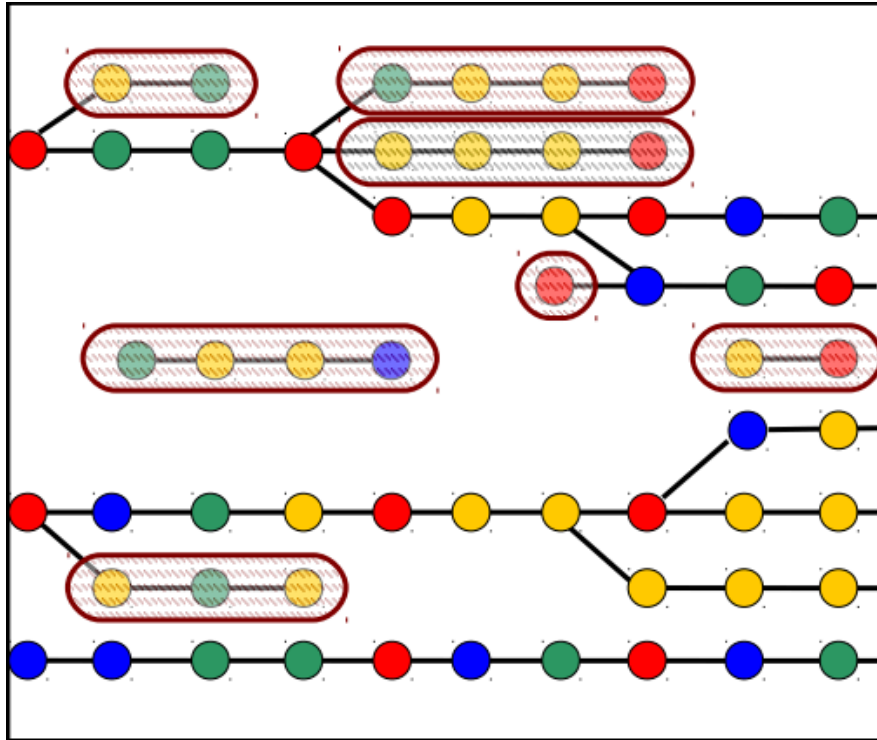
- Two reads
 - GGACATC
 - GGACAGA



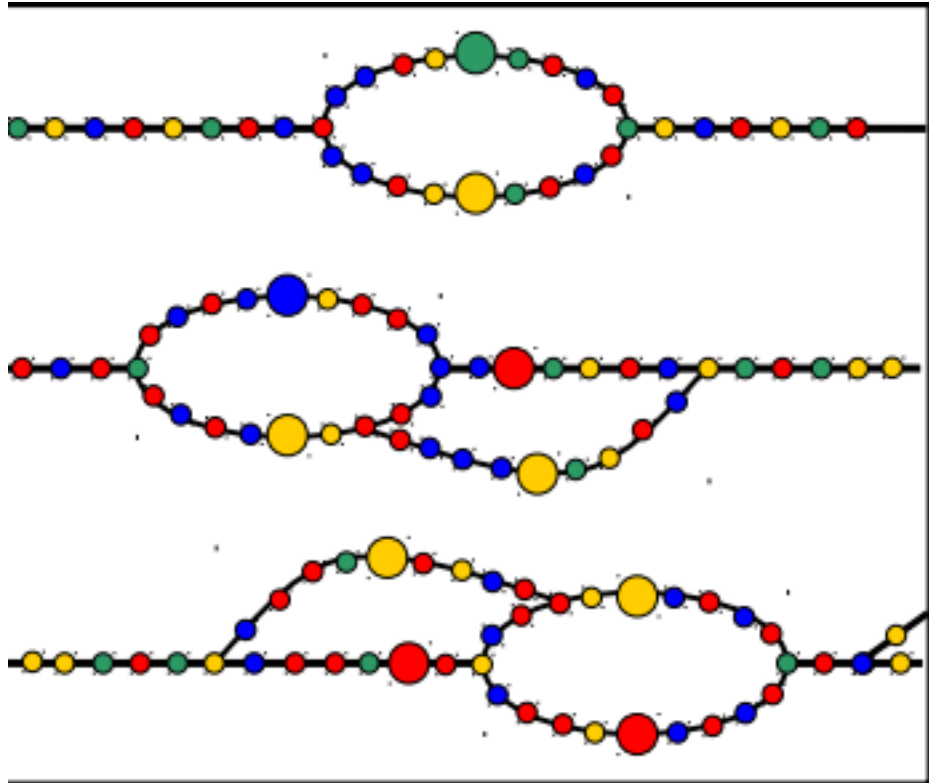
ASSEMBLY – MORE COMPLEX DE BRUIJN



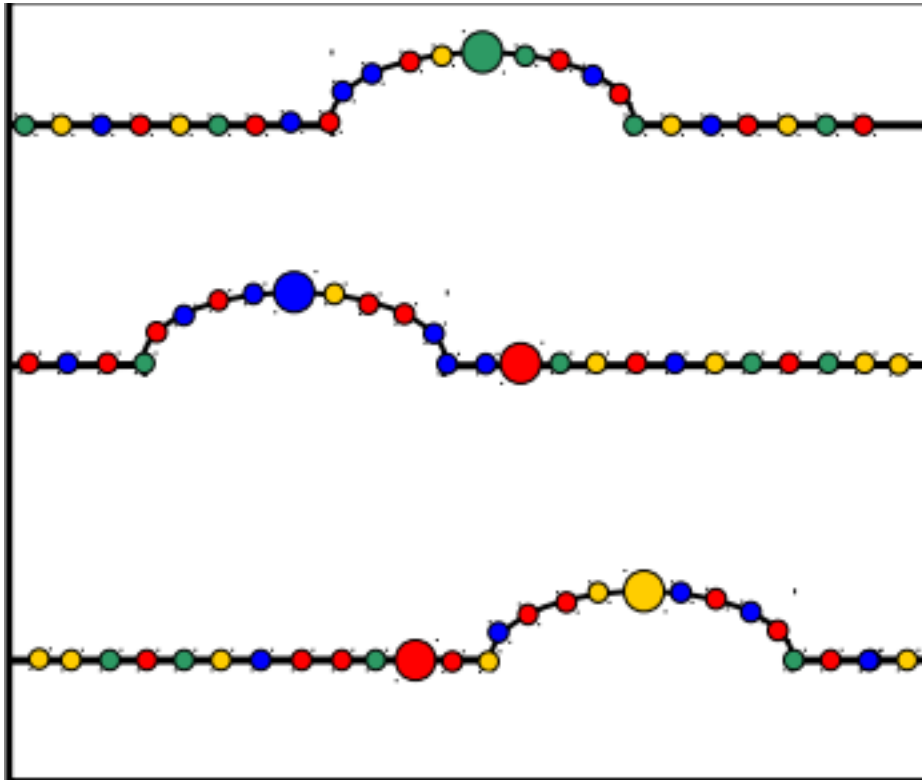
ASSEMBLY – MORE COMPLEX DE BRUIJN



ASSEMBLY – MORE COMPLEX DE BRUIJN

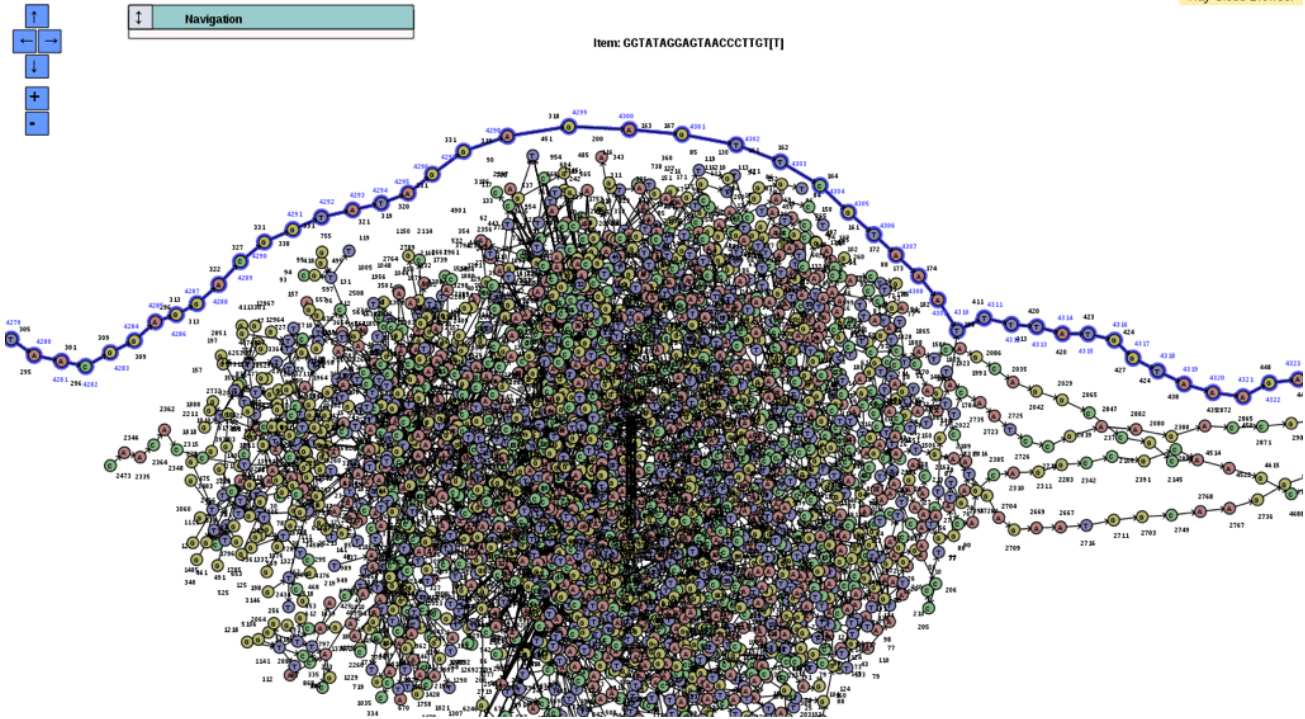


ASSEMBLY – MORE COMPLEX DE BRUIJN



ASSEMBLY – MORE COMPLEX DE BRUIJN

Ray Cloud Browser



EVALUATING GENOME ASSEMBLIES

TRANSCRIPTOME ASSEMBLY

What is this?

TRANSCRIPTOME ASSEMBLY

Why easier than genome assembly?

TRANSCRIPTOME ASSEMBLY

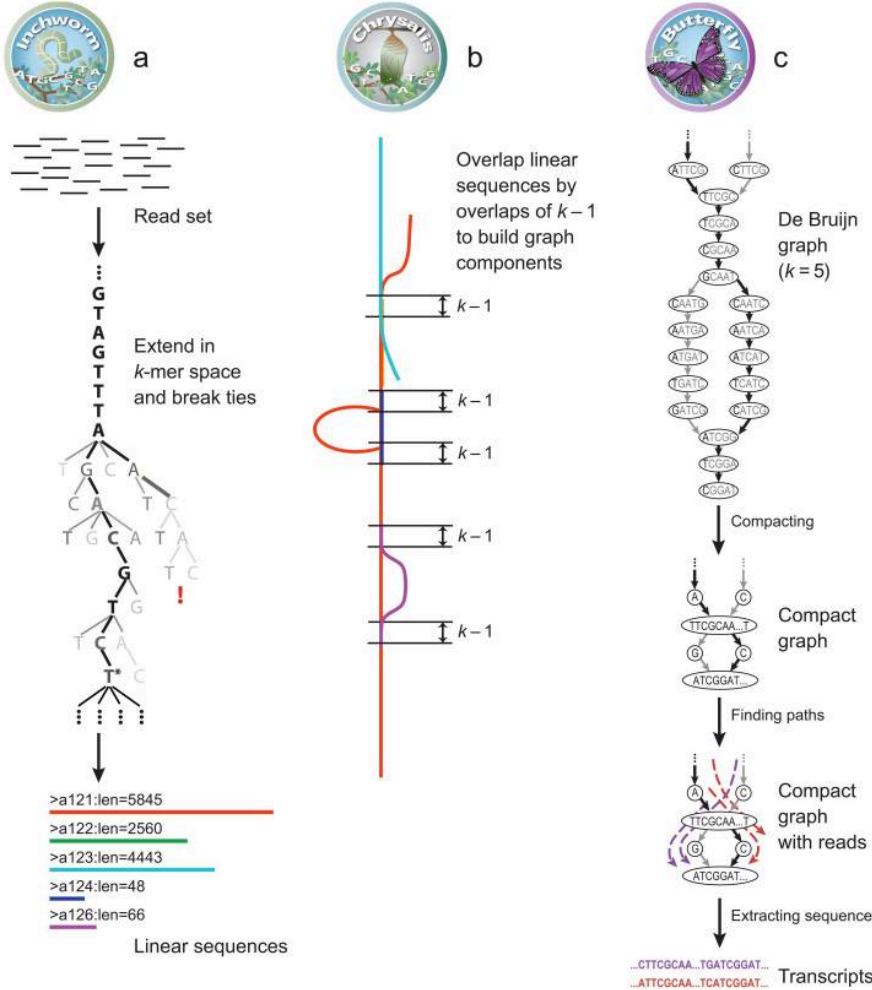
Why harder than genome assembly?

TRANSCRIPTOME ASSEMBLY

The steps:

TRANSCRIPTOME ASSEMBLY

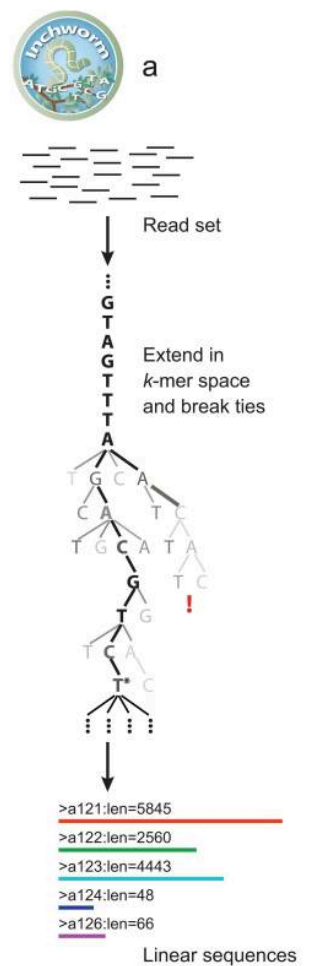
Trinity



TRANSCRIPTOME ASSEMBLY

<http://www.broadinstitute.org/videos/trinity-how-it-works>

TRANSCRIPTOME ASSEMBLY

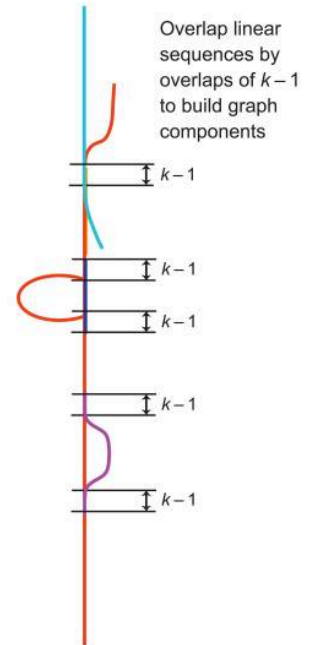


TRANSCRIPTOME ASSEMBLY

Trinity



b

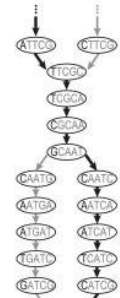


TRANSCRIPTOME ASSEMBLY

Trinity

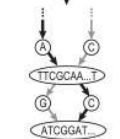


C



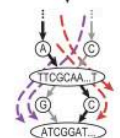
De Bruijn graph
($k = 5$)

Compacting



Compact graph

Finding paths



Compact graph with reads

Extracting sequences

...CTTCGCAA_TGATCGGAT...
...ATTGCGAA_TCATCGGAT...

Transcripts