CODE FROM WEEK2

velvetg ~/qbb2016-answers/week2/Assem/

velveth Assem 31 -shortPaired -fastq -separate ~/qbb2016-answers/week2/reads\_1.fastq ~/qbb2016-answers/week2/reads\_2.fastq

time velveth Assem 31 -shortPaired -fastq -separate ~/qbb2016-answers/week2/reads\_low\_1.fastq ~/qbb2016-answers/week2/reads\_low\_2.fastq

time spades.py -o ~/qbb2016-answers/week2/spades -1 reads\_low\_1.fastq -2 reads\_low\_2.fastq

spades.py -o ~/qbb2016-answers/week2/spades -1 reads\_1.fastq -2 reads\_2.fastq

time velveth Assem 31 -shortPaired -fastq -separate ~/qbb2016-answers/week2/reads\_low\_1.fastq ~/qbb2016-answers/week2/reads\_low\_2.fastq

[0.000000] Reading FastQ file /Users/cmdb/qbb2016-answers/week2/reads\_low\_1.fastq;

[0.000295] Reading FastQ file /Users/cmdb/qbb2016-answers/week2/reads\_low\_2.fastq;

[0.009003] 2000 sequences found in total in the paired sequence files

[0.009012] Done

[0.010446] Reading read set file Assem/Sequences;

[0.011013] 2000 sequences found

[0.014206] Done

[0.014219] 2000 sequences in total.

[0.014286] Writing into roadmap file Assem/Roadmaps...

[0.017102] Inputting sequences...

[0.017112] Inputting sequence 0 / 2000

[0.172215] === Sequences loaded in 0.155114 s

[0.172402] Done inputting sequences

[0.172412] Destroying splay table

[0.185246] Splay table destroyed

real 0m0.202s

user 0m0.090s

sys 0m0.068s

time velvetg ~/qbb2016-answers/week2/Assem/

[0.000000] Reading roadmap file /Users/cmdb/qbb2016-answers/week2/Assem//Roadmaps

[0.004350] 2000 roadmaps read

[0.004384] Creating insertion markers

[0.004562] Ordering insertion markers

[0.004906] Counting preNodes

[0.005199] 2805 preNodes counted, creating them now

[0.024882] Adjusting marker info...

[0.024998] Connecting preNodes

[0.025739] Cleaning up memory

[0.025747] Done creating preGraph

[0.025750] Concatenation...

[0.027934] Renumbering preNodes

[0.027946] Initial preNode count 2805

[0.027987] Destroyed 2430 preNodes

[0.027991] Concatenation over!

[0.027994] Clipping short tips off preGraph

[0.028074] Concatenation...

[0.028097] Renumbering preNodes

[0.028101] Initial preNode count 375

[0.028112] Destroyed 59 preNodes

[0.028115] Concatenation over!

[0.028118] 57 tips cut off

[0.028121] 316 nodes left

[0.028256] Writing into pregraph file /Users/cmdb/qbb2016-answers/week2/Assem//PreGraph...

[0.038351] Reading read set file /Users/cmdb/qbb2016-answers/week2/Assem//Sequences;

[0.039019] 2000 sequences found

[0.041276] Done

[0.045285] Reading pre-graph file /Users/cmdb/qbb2016-answers/week2/Assem//PreGraph

[0.045324] Graph has 316 nodes and 2000 sequences

[0.053002] Scanning pre-graph file /Users/cmdb/qbb2016-answers/week2/Assem//PreGraph for k-mers

[0.057095] 47962 kmers found

[0.062413] Sorting kmer occurence table ...

[0.077001] Sorting done.

[0.077024] Computing acceleration table...

[0.165558] Computing offsets...

[0.165996] Ghost Threading through reads 0 / 2000

[0.189425] === Ghost-Threaded in 0.023429 s

[0.189448] Threading through reads 0 / 2000

[0.214629] === Threaded in 0.025181 s

[0.222195] Correcting graph with cutoff 0.200000

[0.222293] Determining eligible starting points

[0.222557] Done listing starting nodes

[0.222568] Initializing todo lists

[0.222589] Done with initilization

[0.222592] Activating arc lookup table

[0.222611] Done activating arc lookup table

[0.222951] Concatenation...

[0.222966] Renumbering nodes

[0.222968] Initial node count 316

[0.222977] Removed 6 null nodes

[0.222980] Concatenation over!

[0.222982] Clipping short tips off graph, drastic

[0.223028] Concatenation...

[0.223059] Renumbering nodes

[0.223072] Initial node count 310

[0.223085] Removed 4 null nodes

[0.223088] Concatenation over!

[0.223090] 306 nodes left

[0.223293] Writing into graph file /Users/cmdb/qbb2016-answers/week2/Assem//Graph...

[0.247469] WARNING: NO COVERAGE CUTOFF PROVIDED

[0.247498] Velvet will probably leave behind many detectable errors

[0.247503] See manual for instructions on how to set the coverage cutoff parameter

[0.247533] Removing contigs with coverage < -1.000000...

[0.247563] Concatenation...

[0.247575] Renumbering nodes

[0.247579] Initial node count 306

[0.247585] Removed 0 null nodes

[0.247589] Concatenation over!

[0.247606] Concatenation...

[0.247616] Renumbering nodes

[0.247619] Initial node count 306

[0.247623] Removed 0 null nodes

[0.247626] Concatenation over!

[0.247634] Clipping short tips off graph, drastic

[0.247665] Concatenation...

[0.247675] Renumbering nodes

[0.247678] Initial node count 306

[0.247682] Removed 0 null nodes

[0.247686] Concatenation over!

[0.247688] 306 nodes left

[0.247692] WARNING: NO EXPECTED COVERAGE PROVIDED

[0.247695] Velvet will be unable to resolve any repeats

[0.247699] See manual for instructions on how to set the expected coverage parameter

[0.247703] Concatenation...

[0.247713] Renumbering nodes

[0.247717] Initial node count 306

[0.247721] Removed 0 null nodes

[0.247724] Concatenation over!

[0.247728] Removing reference contigs with coverage < -1.000000...

[0.247756] Concatenation...

[0.247765] Renumbering nodes

[0.247769] Initial node count 306

[0.247774] Removed 0 null nodes

[0.247777] Concatenation over!

[0.247908] Writing contigs into /Users/cmdb/qbb2016-answers/week2/Assem//contigs.fa...

[0.260827] Writing into stats file /Users/cmdb/qbb2016-answers/week2/Assem//stats.txt...

[0.262796] Writing into graph file /Users/cmdb/qbb2016-answers/week2/Assem//LastGraph...

Final graph has 306 nodes and n50 of 233, max 968, total 47835, using 0/2000 reads

real 0m0.302s

user 0m0.179s

sys 0m0.051s

SPADES time

real 0m5.989s

user 0m8.006s

sys 0m1.110s

lastz reference.fasta[unmask] ~/qbb2016-answers/week2/Assem/contigs.fa --chain --rdotplot=dot.velvet > lastz.velvet.out

lastz reference.fasta[unmask] ~/qbb2016-answers/week2/spades/contigs.fasta --chain --rdotplot=dot.spades > lastz.spades.out

python /usr/local/bin/quast ~/qbb2016-answers/week2/spades2/contigs.fasta ~/qbb2016-answers/week2/velvet2/Assem/contigs.fa ~/qbb2016-answers/week2/spades/contigs.fasta ~/qbb2016-answers/week2/Assem/contigs.fa

python /usr/local/bin/quast -R ~/qbb2016-answers/week2/reference.fasta ~/qbb2016-answers/week2/spades2/contigs.fasta ~/qbb2016-answers/week2/velvet2/Assem/contigs.fa ~/qbb2016-answers/week2/spades/contigs.fasta ~/qbb2016-answers/week2/Assem/contigs.fa