

Operation: DUODENARY STAR SYSTEM (DSS)

I have already run STAR on the 12 .fastq files IN THE SAME COMMAND, creating one count_table. However, despite being able to find the genes within each of the 3 special regions (Genein3Regions.txt offline), I am still left without a method to relate the gene counts or the gene names to the meiotic time points A to V.

The main goal of this markdown is to run STAR on each of the 12 .fastq files individually. (hence the name of a 12-star system) By doing this, I will be able to compare the gene_counts of the original count_data to the gene_count tables of the 12 individual ones. And then grab or organize rows from the full merged_data set per time point that way.

12 fastq's --STAR--> 12 bam's --htseq-count--> 12 count tables (txt)

In [7]: `pwd`

`/scratch/df2463/AppGen2024/Brar Final Project`

In [8]: *# STAR_GG is already done. Genome index already present.*

```
touch STAR_DSS01.sbatch
touch STAR_DSS02.sbatch
touch STAR_DSS03.sbatch
touch STAR_DSS04.sbatch
touch STAR_DSS05.sbatch
touch STAR_DSS06.sbatch
touch STAR_DSS07.sbatch
touch STAR_DSS08.sbatch
touch STAR_DSS09.sbatch
touch STAR_DSS10.sbatch
touch STAR_DSS11.sbatch
touch STAR_DSS12.sbatch
```

In [18]: `mkdir DuodenarySTARSystem`

In [9]: `ls | grep .fastq`

```
SRR387839.fastq
SRR387840.fastq
SRR387841.fastq
SRR387842.fastq
SRR387843.fastq
SRR387844.fastq
SRR387845.fastq
SRR387846.fastq
SRR387848.fastq
SRR387849.fastq
SRR387850.fastq
SRR387865.fastq
```

```
In [42]: sbatch STAR_DSS01.sbatch
sbatch STAR_DSS02.sbatch
sbatch STAR_DSS03.sbatch
sbatch STAR_DSS04.sbatch
sbatch STAR_DSS05.sbatch
sbatch STAR_DSS06.sbatch
sbatch STAR_DSS07.sbatch
sbatch STAR_DSS08.sbatch
sbatch STAR_DSS09.sbatch
sbatch STAR_DSS10.sbatch
sbatch STAR_DSS11.sbatch
sbatch STAR_DSS12.sbatch
```

```
Submitted batch job 45902938
Submitted batch job 45902939
Submitted batch job 45902940
Submitted batch job 45902941
Submitted batch job 45902942
Submitted batch job 45903214
Submitted batch job 45903216
Submitted batch job 45903217
Submitted batch job 45903218
Submitted batch job 45903220
Submitted batch job 45903221
Submitted batch job 45903222
```

```
In [16]: ## Cerated index files for all the bams
##proceed to htseq-count now

module load samtools/intel/1.14
for file in ./DuodenarySTARSystem/*bam
do
samtools index ${file}
done
```

```
In [3]: mkdir DDS-readcounts
```

```
In [18]: #touch DDShtscount.sbatch
```

```
In [2]: ##Generating 12 count tables.
# For some reason this didn't work as an sbatch. Maybe too many resources or someth
#sbatch ./DDShtscount.sbatch
module purge
```

```
module load htseq/0.13.5
for fyle in ./DuodenarySTARSystem/*Aligned.sortedByCoord.out.bam
do
htseq-count -f bam -r pos -t gene -i ID ${fyle} SK1.all_feature.gff > "${fyle:-6:11}
done

# this naming thing didn't work properly...
```

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```
In [24]: ## Fixing the names & moving to another directory
        for countfile in ./DuodenarySTARSystem/*.txt
        do
            mv ${countfile} ${countfile%Aligned.sortedByCoord.out.bamAlignedReadCounts.txt}Align
        done
```

```
In [31]: #cd ./DuodenarySTARSystem/
```

```
In [32]: #pwd
```

```
/scratch/df2463/AppGen2024/Brar Final Project/DuodenarySTARSystem
```

```
In [33]: #file in *.txt
```

```
in:                                     cannot open `in' (No such file or directory)
STAR_SK01AlignedReadCounts.txt: ASCII text
STAR_SK02AlignedReadCounts.txt: ASCII text
STAR_SK03AlignedReadCounts.txt: ASCII text
STAR_SK04AlignedReadCounts.txt: ASCII text
STAR_SK05AlignedReadCounts.txt: ASCII text
STAR_SK06AlignedReadCounts.txt: ASCII text
STAR_SK07AlignedReadCounts.txt: ASCII text
STAR_SK08AlignedReadCounts.txt: ASCII text
STAR_SK09AlignedReadCounts.txt: ASCII text
STAR_SK10AlignedReadCounts.txt: ASCII text
STAR_SK11AlignedReadCounts.txt: ASCII text
STAR_SK12AlignedReadCounts.txt: ASCII text
```

```
In [34]: #for countfile in *.txt
        #do
            #mv ${countfile} ../DDS-readcounts/${countfile}
        #done

        ## Move the finished read counts to the DDS-readcounts folder
```

```
In [35]: #cd ..
```

```
In [36]: pwd
```

```
/scratch/df2463/AppGen2024/Brar Final Project
```

```
In [25]: ls -l ./DuodenarySTARSystem/ | grep "\.txt"
```

```
-rw-r--r--. 1 df2463 df2463 94759 Apr 30 19:51 STAR_SK01AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 93194 Apr 30 19:53 STAR_SK02AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 93812 Apr 30 19:56 STAR_SK03AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 95245 Apr 30 20:01 STAR_SK04AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 94303 Apr 30 20:07 STAR_SK05AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 94122 Apr 30 20:09 STAR_SK06AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 94153 Apr 30 20:12 STAR_SK07AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 92288 Apr 30 20:13 STAR_SK08AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 94657 Apr 30 20:16 STAR_SK09AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 93118 Apr 30 20:20 STAR_SK10AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 94543 Apr 30 20:25 STAR_SK11AlignedReadCounts.txt
-rw-r--r--. 1 df2463 df2463 95461 Apr 30 20:31 STAR_SK12AlignedReadCounts.txt
```

Now we should be good to go. readcount txt files created.

In []: