

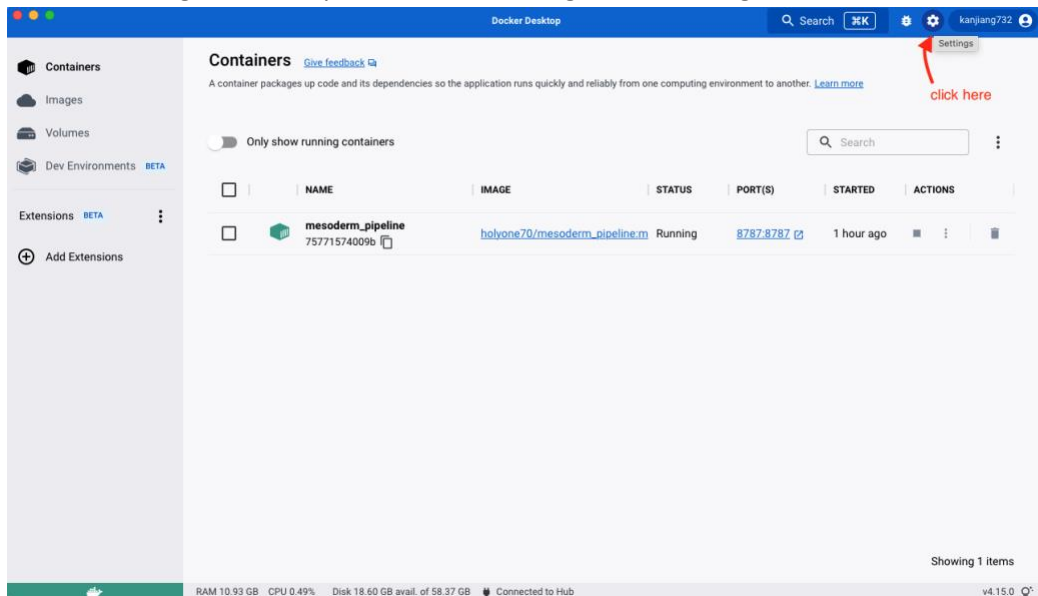
1. Install docker from Docker website ([Docker Desktop](#) | [Docker](#)). Depending on the mac OS system, the intel Chip or Apple Chip version should be downloaded and installed.
2. After installing docker, open a new terminal and download docker image using command below:

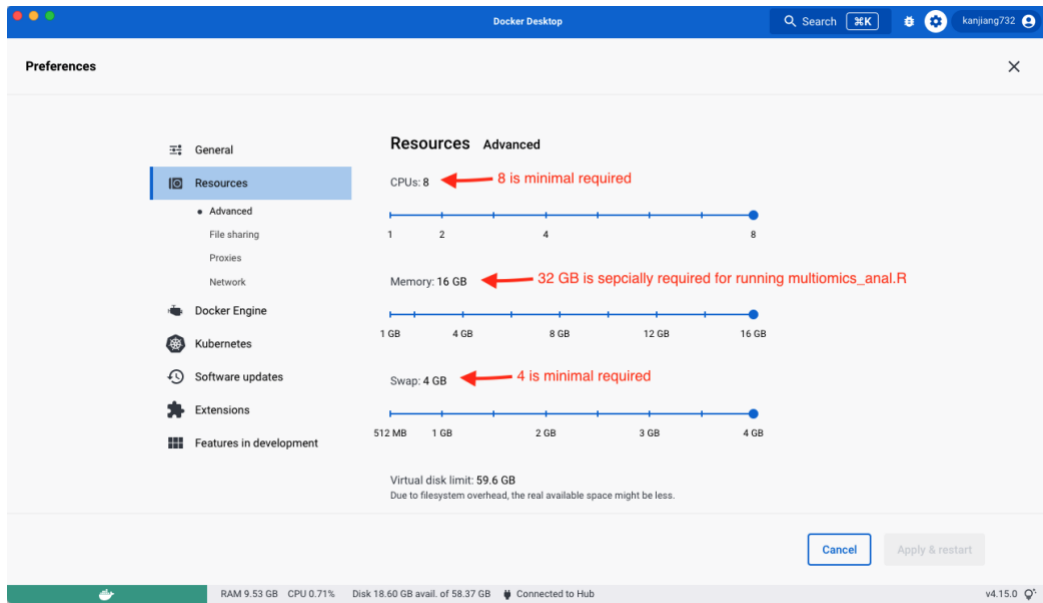
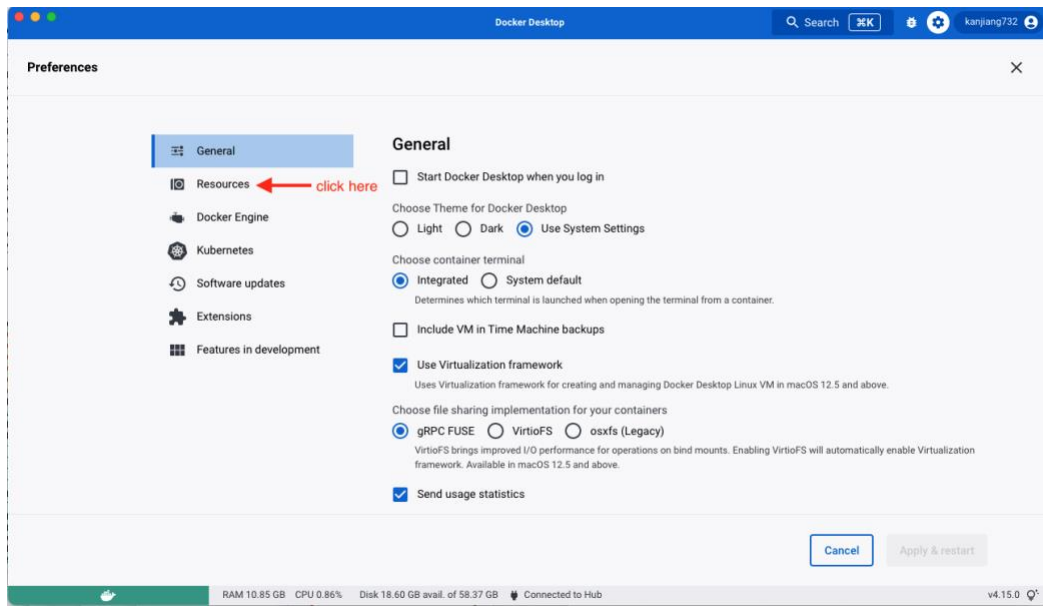
```
docker pull holyone70/mesoderm_pipeline:mesoderm_pipeline
```

```
Last login: Wed Dec 28 11:35:31 on ttys001

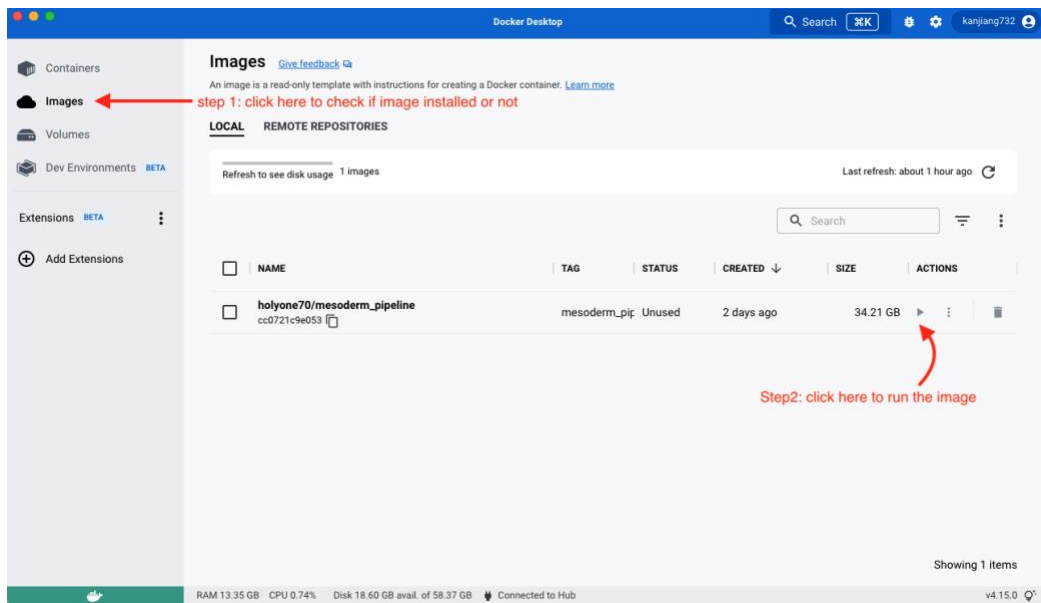
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
(base) NIAMS02153997A:~$ docker pull holyone70/mesoderm_pipeline:mesoderm_pipeline
mesoderm_pipeline: Pulling from holyone70/mesoderm_pipeline
6e3729cf69e0: Pull complete
38ca03cb4341: Pull complete
391772febd46: Pull complete
99e045fd6f13: Pull complete
186a2b35b41b: Pull complete
c0759ba74bbb: Pull complete
b1f27ab4e668: Pull complete
1027de734881: Pull complete
de9a3d7eb990: Pull complete
a6af7decf098: Pull complete
Digest: sha256:6f34177b354d244a277a5faf07a263abc38085f632cbc04283c8234d6de66480d
Status: Downloaded newer image for holyone70/mesoderm_pipeline:mesoderm_pipeline
docker.io/holyone70/mesoderm_pipeline:mesoderm_pipeline
(base) NIAMS02153997A:~$
```

3. Resources assigned are required before running the dock image.

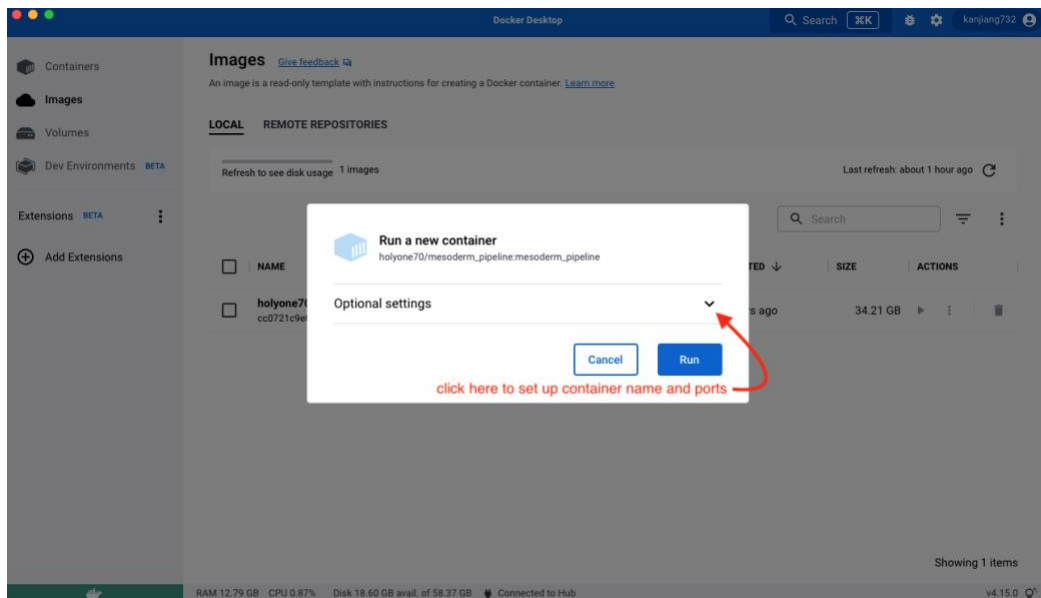


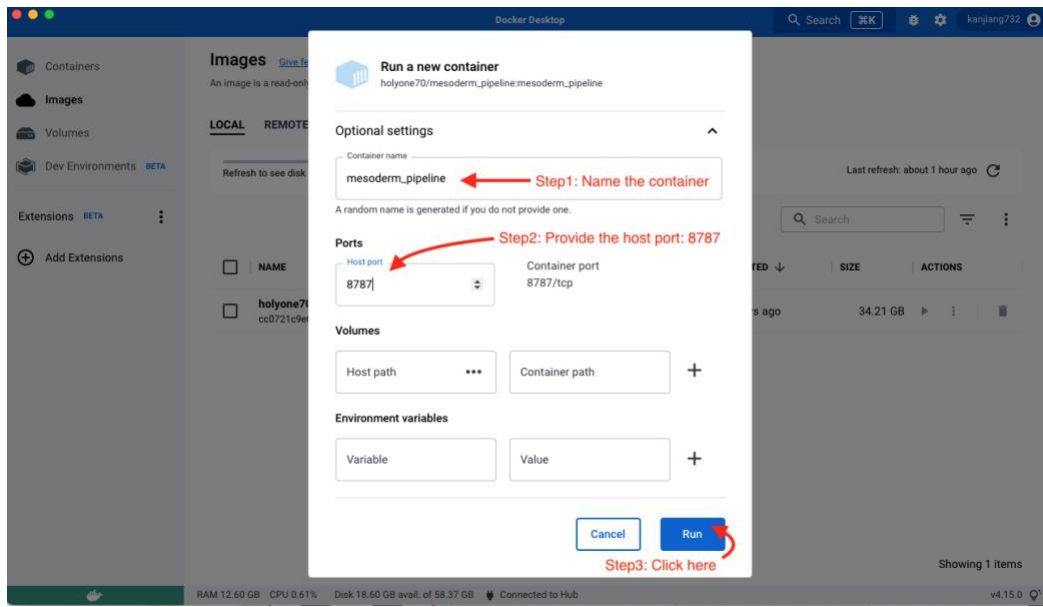


4. Run Docker Desktop, check the docker image to download and run the docker image

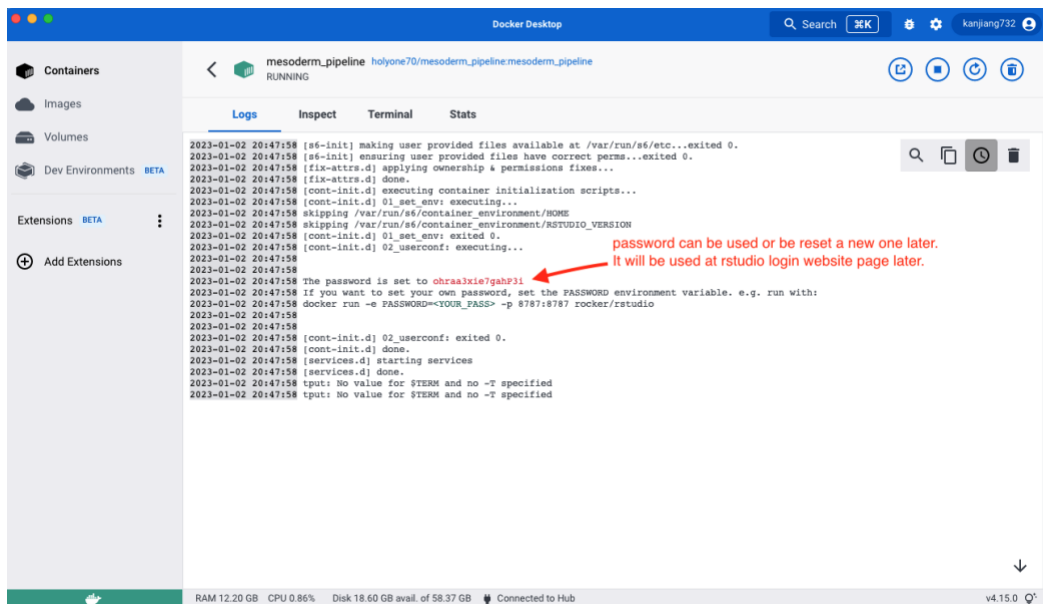


5. Setting up the container name and ports

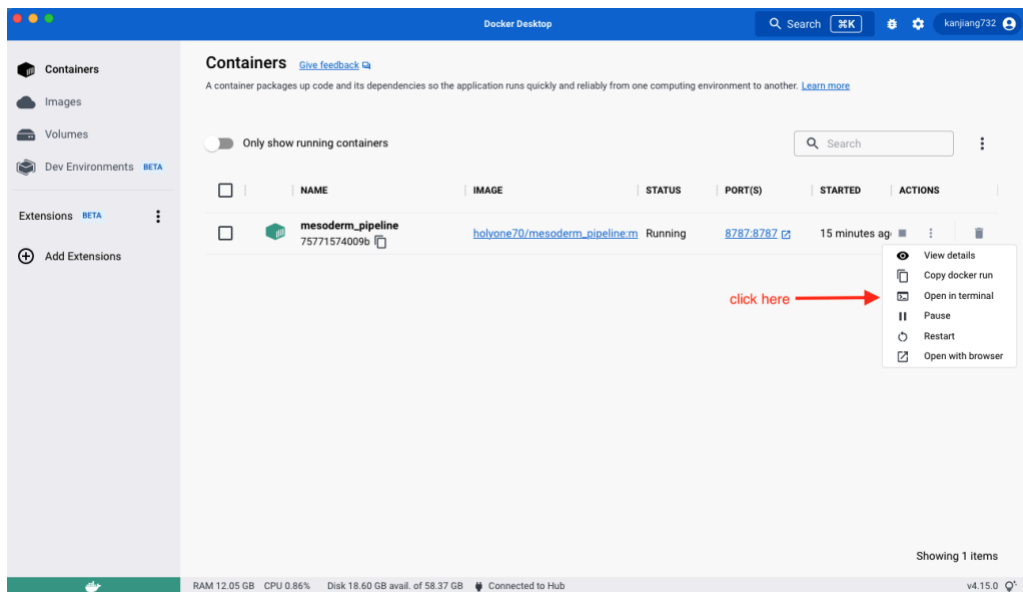




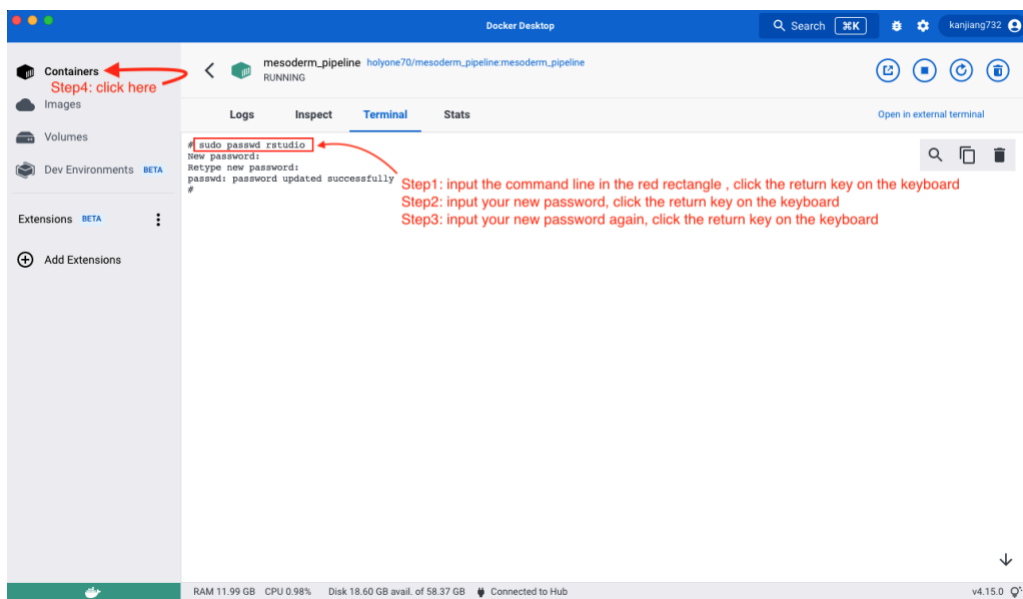
Output will be shown as below:



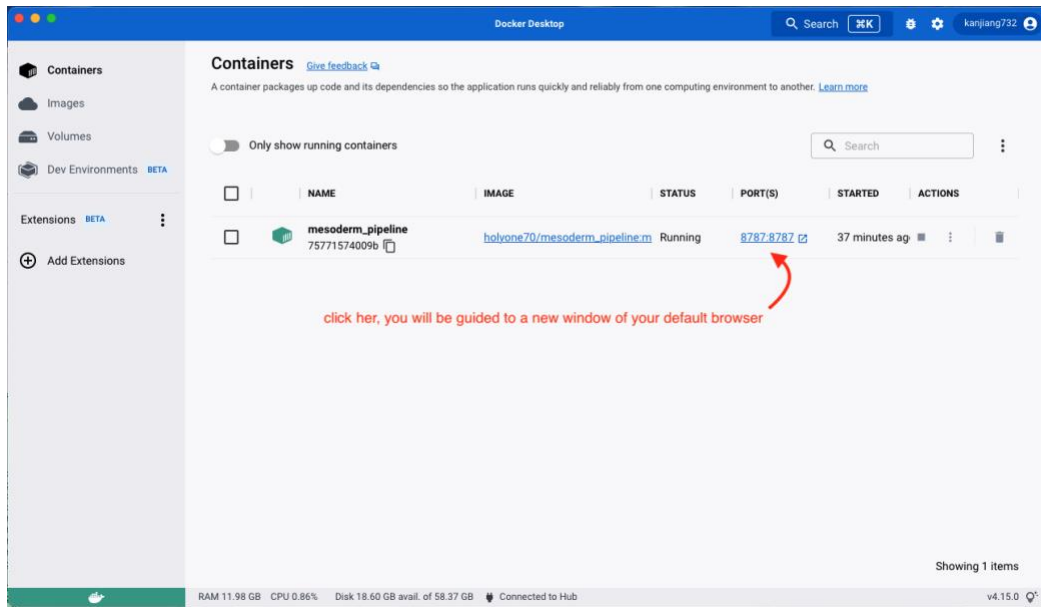
6. Reset the password for log in Rstudio server. The username: rstudio



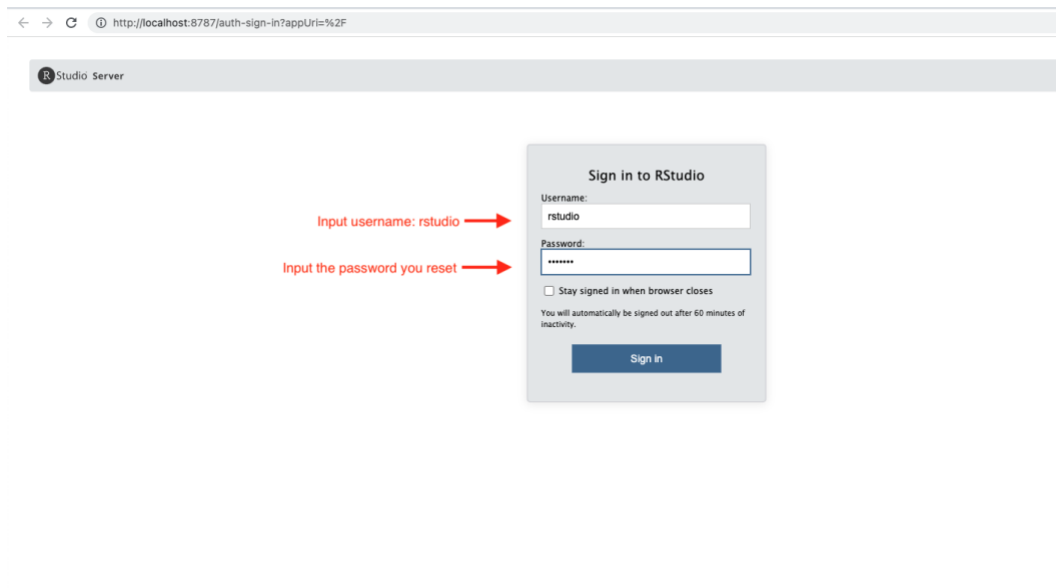
Command line: **sudo passwd rstudio**



7. Run Rstudio server in Docker container



8. Login Rstudio server



9. Start to run the R script selected

← → ↻ http://localhost:8787

File Edit Code View Plots Session Build Debug Profile Tools Help

rstudio star_protocol

Environment History Connections Tutorial

R 4.2.2 463 MB

Global Environment

Environment is empty

Files Plots Packages Help Viewer Presentation

New Folder New Blank File Upload Delete Rename More

Home star_protocol

Name	Size	Modified
int_scrRNA.R	8 KB	Dec 30, 2022, 1:03 AM
multionics		
multionics_anal.R	11.1 KB	Dec 31, 2022, 10:35 PM
multionics	159 B	Dec 2, 2022, 5:52 PM
naive_instructed_esc.csv	582.5 MB	Dec 22, 2022, 8:00 AM
naive_instructed_scrRNA_ESCs.RData		
naive_scrRNA		
scATAC_analysis.R	4.9 KB	Dec 30, 2022, 12:57 AM
scRNA_analysis.R	5.1 KB	Dec 30, 2022, 12:39 AM
Software_preparation.R	1.8 KB	Dec 22, 2022, 7:28 AM
Star_clusters.RData	2.8 GB	Dec 31, 2022, 4:49 PM
Star_ds6k.RData	1.7 GB	Dec 31, 2022, 4:12 PM
Star_final.RData	3.3 GB	Dec 31, 2022, 9:53 PM
Star_protocol.Rproj	205 B	Jan 2, 2023, 9:39 PM
Star.RData	1.8 GB	Dec 31, 2022, 4:36 PM
transfer.anchors_aPSM_atac.RData	9.5 MB	Dec 22, 2022, 8:04 AM

```
1 #library(RCurl)
2 #options(timeout=1200)
3 #url = "ftp://ftp.ncbi.nlm.nih.gov/geo/series/GSE198730/suppl/"
4 #filenames = getURLCurl(ftp.use.epsv = FALSE, dirlistonly = TRUE)
5 #ifelseSys.info()["sysname"]=="Windows",filenames<- strsplit(filenames, "\n"),filenames <- strsplit(filenames, "\n")
6 #filenames = unlist(filenames)
7 #file.list<-c("GSE198730_HIPLR_scATAC_fragments.tsv.gz", "GSE198730_HIPLR_scRNA_harcodes.tsv.gz", "GSE198730_HIPLR_scRNA_harcodes.tsv.gz")
8 #get_files<-intersect(filenames,file.list)
9
10 #dest_dir<-paste(getwd(), "/multionics/", sep="")
11 #dir.create(dest_dir, showWarnings = FALSE)
12 #dest_dir<-paste(getwd(), "/multionics/filtered_feature_bc_matrix/", sep="")
13 #dir.create(dest_dir, showWarnings = FALSE)
14 #for (filename in get_files) {
15 #   download.file(paste(url, filename, sep = ""), paste(getwd(), "/multionics/filtered_feature_bc_matrix/", filename, sep =
16 #   })
17 #   file.rename(paste(dest_dir, "GSE198730_HIPLR_scATAC_fragments.tsv.gz", sep=""), paste(dest_dir, "fragments.tsv.gz", sep=""))
18 #   file.rename(paste(dest_dir, "GSE198730_HIPLR_scRNA_harcodes.tsv.gz", sep=""), paste(dest_dir, "harcodes.tsv.gz", sep=""))
19 #}
20 #R Script
269:1 Docker running start below ?
```

Console Terminal Background Jobs

R 4.2.2 - ~/star_protocol

R version 4.2.2 (2022-10-31) -- "Innocent and Trusting"
Copyright (C) 2022 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

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