Introduction:

In Bioinformatics, a genome browser is a graphical interface for display of information from a biological database for genomic data. Genome Browser can also be used to retrieve biological data. We will retrieve SARS-CoV-2 Viral Genome.

Steps:

- Go to the 'Genome Browser' which you can access here.
- Search for 'SARS-CoV-2' in the search bar.
- The information page of the SARS-CoV-2 will be displayed.
- Scroll down this page, you will see there are many options available to download an entire sequence and annotation data.
- From those options, first click on the 'Data use Condition and Restriction', which would open up the terms and conditions' page, and give it a read.

Retrieve through an Editor

- Now, go back and select the 'Using FTP' and it will open up the directory which contains folders (bigzips, chromosomes, database)
- If you go to 'BigZips', where you can access individual chromosomes *such as MaskedChromosoms*.
- There's a file named 'ReadMe', which is a text file, containing the information of the directory you are in.
- Go back to the 'Parent Directory'.
- Click on the 'Chromosomes' folder, which contains the '.gz' file and is named by the NCBI's genome accession number (it holds the entire Genome of SARS-CoV-2).
- Click on this '.gy' file and download it.
- Drag the downloaded file to any editor *e.g. Visual Studio Code.*
- You can visualize the entire genome sequence on the editor and further use it for your analysis.

Retrieve through BASH

- Copy the link of the '.gz' file.
- Go to the BASH if you have a Linux computer.
- Firstly, to get the file, type '*wget*' followed by the link of the file.
- It will retrieve the file.
- Now, to unzip the file, type '*gunzip NC**
- And in the next line, '*ls*'.
- It will find the file and display the name of the file.
- Now, type '*cat NC* | head – n 50*', it will display the first 50 lines of the SARS-CoV-2 Genome Sequence.

Note: Make sure you have WinRAR installed in your computer, so the file can be unzipped.

Summary:

In this video, we got to see how to retrieve an entire genome by using SARS-CoV-2 as an example. We got to see how to retrieve the genome through two different Operating System; through Windows and through Linux.