Which genome browser to use for my data ?

Answers to the quiz

http://tinyurl.com/genome-browsers

Q1: Find the right genome browser for each screenshot.

Jbrowse, IGB, UCSC (it was written in the bar of the window), IGV, Tablet, GIVE, Artemis

Q2: Which viewers allow to search the genome by sequence similarity ?

Artemis and IGB include BLAST searches, and IGB and UCSC include BLAT searches. Tablet and Jbrowse allow to query the reference sequence by exact match only or with a regular expression. But there is no real similarity search. As for GIVE, no such functionality exists .

Q3: Which tools are able to load Chr1 of Hg38 (249 megabases) together with a BAM file of 3GB on a laptop with 16GB RAM?

Only IGV (local native app version) and Tablet succeeded in loading those files, requiring respectively 12GB and 4GB RAM (and a few minutes, the time to drink a cup of tea).

Q4: Cite two viewers that have been developed in Europe (before the Brexit).

Artemis was developed by the Wellcome Sanger Institute (Cambridge, UK) and Tablet by the James Hutton Institute in Scotland.

Q5: Which viewers come with a Conda installation ?

The official releases of Artemis, IGV and Tablet include a conda package (bioconda for IGV and Tablet) .

Q6: Which tools have an official channel on Youtube ?

IGB: https://www.youtube.com/channel/UC0DA2d3YdbQ55ljkRKHRBkg

IGV **:** https://www.youtube.com/channel/UCb5W5WqauDOwubZHb-IA_rA

UCSC: https://www.youtube.com/channel/UCQnUJepyNOw0p8s2otX4RYQ

Q7: Which browsers to use to visualise interaction data ?

The name of GIVE is in fact an acronym for Genomic Interaction Visualization Engine. This is currently the only viewer from our study that could fully support chIA-PET or Hi-C data (July 2019). The UCSC genome browser accepts interaction files as bigInteract track format. It   displays pairwise interactions as arcs of half-rectangles connecting two genomic regions on the same chromosome.

Q8: Is there any colour-blind friendly tool ?

IGB, IGV, Jbrowse and Tablet allow the user to customize almost all colours at her/his convenience.

Q9: Is it possible to export images of tracks in SVG ?

IGV and Artemis offer such possibility. All other tools, except GIVE and Jbrowse, propose customisable graphic export in PNG, JPG and/or PDF.

Q10: Which tools provide a direct connection to ENCODE ?

IGV and USCS both offer this functionality. A few dozen of ENCODE tracks are available on the public GIVE Data Hub, but there is no direct connection to ENCODE database.

Q11: I would like to use a command-line genome browser running from terminal window. What can I do ?

You could use ASCIIGenome: "ASCIIGenome is a command-line genome browser running from terminal window and solely based on ASCII characters. Since ASCIIGenome does not require a graphical interface it is particularly useful for quickly visualizing genomic data on remote servers. The idea is to make ASCIIGenome the Vim of genome viewers."