IC251 – Basics of Bioinformatics (2022-23W)

Tutorial 2 February 22, 2023

Please type the answers in a separate word document, also add the screenshots of the exercise and paste in the same word document. Please do not copy from internet, write in your own language.

Part A:

1. What do you understand by ORF?
2. What is the difference between Bioinformatics versus Computational Biology?
3. Write down the applications of Bioinformatics (pointwise).
4. Define the FASTA format of sequences with example.

Part B:

Browse the NCBI database to download the SARS-COV-2 reference genome sequence and save it in the text file. Perform the below steps:

1. Open NCBI: www.ncbi.nlm.nih.gov
2. Click on the hyperlink: SARS-CoV-2 data (NCBI)
3. How many "Nucleotide records" are present?
4. Click on "Nucleotide records".
5. Click on the accession number "NC_045512".
6. Write the information about this entry including Length, Host, Molecule Type, Location, Collection Date.
7. Again, click on "NC_045512"
8. Click on FASTA. This leads to the FASTA formatted nucleotide sequence of SARS-COV-2.
9. Click screenshot or photograph and paste in the word file.
10. Copy the sequence starting from > sign to the end.
11. Past the sequence to a text file and save it.

After the exercise is complete, email the word file containing your answers and screenshots of exercise and the sequence file with '.txt' or '.fasta' extension to the TA of your group by 11:30 AM.

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- **Group B:** TA: Shivani Thakur (shivanithakur@iitbhilai.ac.in), Room 309: Roll no. 12140890 to 12141790.

Note:

1. **Subject of email should be:** IC251 Tutorial Roll number.
2. **File name should be:** Roll number