IC251 – Basics of Bioinformatics (2022-23W)
Tutorial 3   **March** 01, 2023

You need to work on the exercise and send the report (word/PDF/txt files) to the TA of your respective group via email by 11:30 AM. Please only add your "roll number" as filename. Subject of the email should be "IC251-Tutorial3-Roll number" (please add your roll number in the subject line).

Exercise:

Part A:

1. Open UniProt database.
2. Search "spike protein".
3. Note the UniProt ID of the top 5 entries (sequences 1 to 5).
4. Download and save the FASTA formatted sequence of the five entries in text file.
5. Rename text files as sequence 1, sequence 2, sequence 3, sequence 4 and sequence 5.

Part B:

1. Open BLAST program.
2. Select Protein BLAST.
3. Select to align two sequences.
4. Perform alignment of the five sequences (downloaded from UniProt) using BLAST:
   i. Align sequence 1 with sequence 2
   ii. Align sequence 1 with 3
   iii. Align sequence 1 with 4
   iv. Align sequence 1 with 5
5. For each alignment, report identity and positive values in word file.
6. Also copy all the alignments in one text file.
7. Send the final results in one mail to the TA of your group by 11:30 AM today.

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

- **Group A:** TA: Pranchal Shrivastava (pranchals@iitbhilai.ac.in), Room 109, Roll no. 11840100, 12041040, 12140010 to 12140880.
- **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