Algoritmos Bioinformática /Bioinformática 2023/2024

Individual Assignment 2

In this individual assignment, you will explore the global and sequence and alignment algorithms.

Student number ends with	Seq1	Seq2	Match	Mismatch	Gap
2	TTACGT	AACCTC	2	-1	-2
3, 9	CGCTTA	ACCTAA	3	-1	-3
2	TATTCG	ATTGGC	2	0	-2
5, 0	TATTCG	ATTTCC	2	-1	-3
6	GCGATT	GGAATT	2	-2	-2
7, 1	TTACGG	TAACGG	1	0	-2
8	CTCGGA	CCGAAT	2	-1	-2

Task 1. Global Alignment

a) Determine the Score and Traceback matrix.

b) Determine the best score.

c) Retrieve the optimal sequence alignment.

d) Explain if there are multiple best alignments.

Task 2. Local Alignment

Repeats steps a) to d) from Task 1.

Task 3. Test functions

Using the code provided and developed in the classes, develop a test function that implements the functionality to obtain the above information from task 1 and 2.

Use a pen and paper to perform task 1 and task 2. Each task should be presented in a separate page. In the end make a photo of the solved alignments and submit as **pdf** format file. Different formats will not be considered. If you prefer you can do a scheme/computer graphic with the above resolution but submit it as pdf. For Task 3, insert a third page also as pdf.

You should submit a pdf file with 3 pages, one per task.