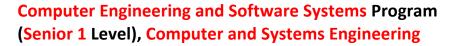
## AIN SHAMS UNIVERSITY FACULTY OF ENGINEERING





Assignment, Spring 2023/2024 Course Code: CSE 486

**Bioinformatics** 

## Question (1):

Alignment with affine gap penalties problem: Construct a highest- scoring global alignment between two strings (with affine gap penalties). The inputs are Two strings v and w, a scoring matrix Score. The output is highest-scoring global alignment between these strings, as defined by the scoring matrix Score and by the gap opening and extension penalties. Implement it using three matrices.

## Question (2):

Implement a function (and any helper functions) that takes two DNA sequences and shows the graphical representation of all required steps to get their global alignment using the 2. Needleman-Wunch Algorithm.