

BIOINFORMATICS

How do we compare biological sequences?

Marco Beccuti

Università degli Studi di Torino

Dipartimento di Informatica



Exercises

Try to align globally/locally the following sequences:

- ACCTG and TGATG;
- ACTCA and CACTC.

$$\text{score matrix} = \begin{bmatrix} 1 & -2 & -2 & -2 & -1 \\ -2 & 1 & -2 & -2 & -1 \\ -2 & -2 & 1 & -2 & -1 \\ -2 & -2 & -2 & 1 & -1 \\ -1 & -1 & -1 & -1 & - \end{bmatrix}$$

Exercises

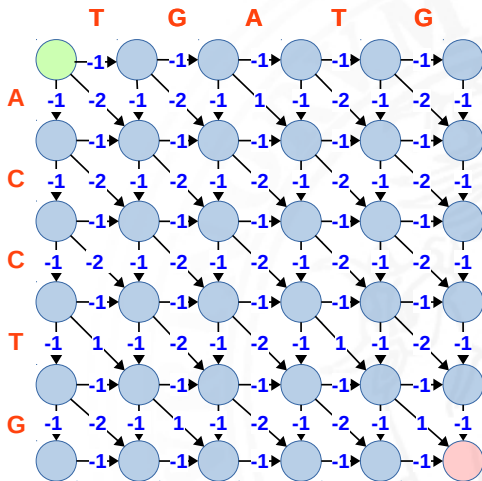
Try to align globally the following sequences:

- ACCTG and TGATG;

Exercises

Try to align globally the following sequences:

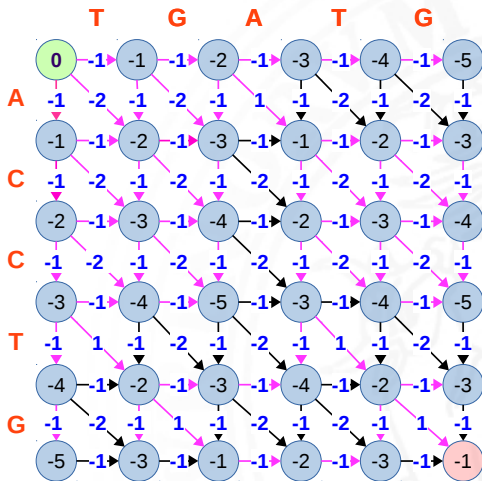
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences:

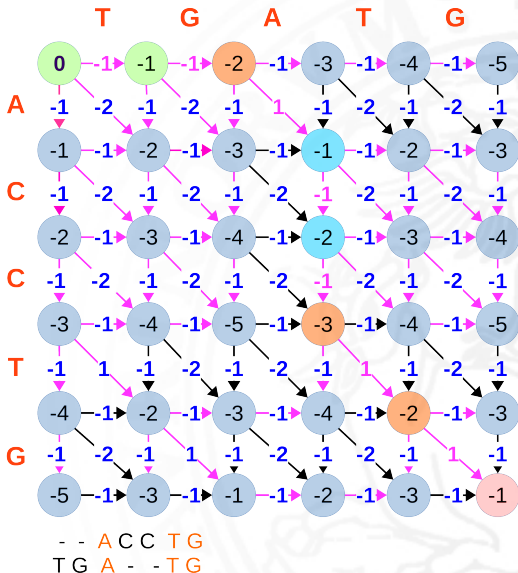
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences:

- ACCTG and TGATG;



Exercises

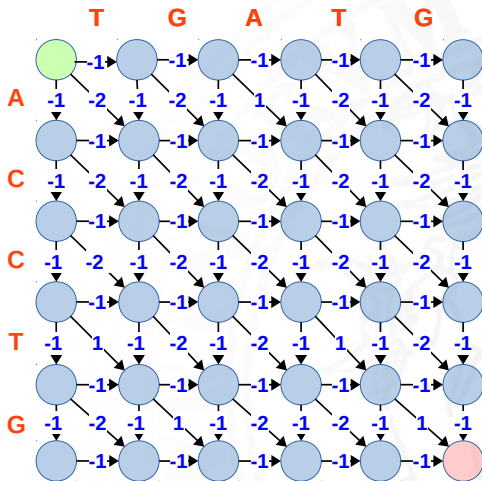
Try to align locally the following sequences:

- ACCTG and TGATG;

Exercises

Try to align locally the following sequences:

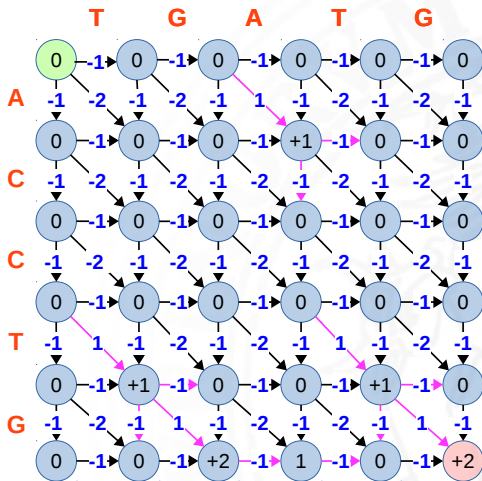
- ACCTG and TGATG;



Exercises

Try to align locally the following sequences:

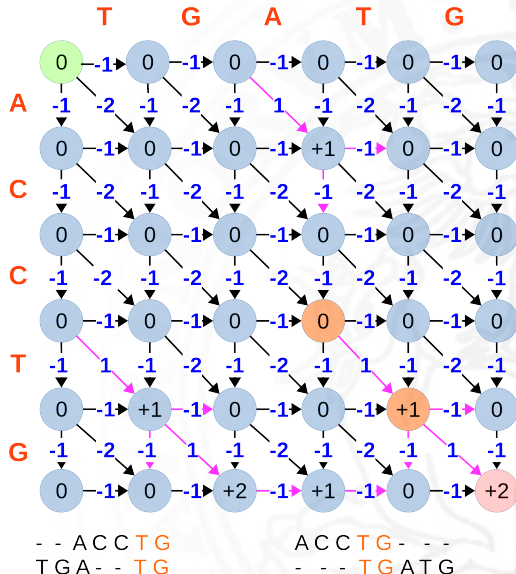
- ACCTG and TGATG;



Exercises

Try to align locally the following sequences:

- ACCTG and TGATG;



Exercises

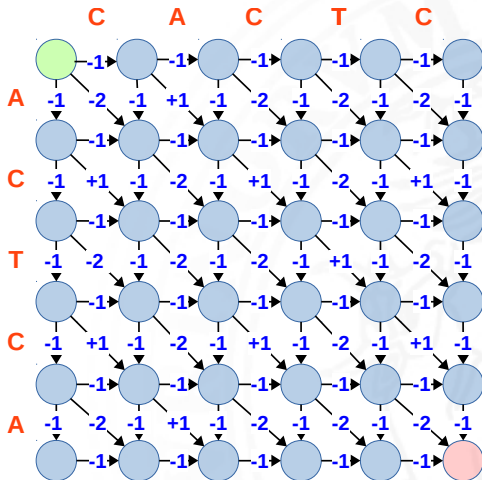
Try to align globally the following sequences:

- ACTCA and CACTC.

Exercises

Try to align globally the following sequences:

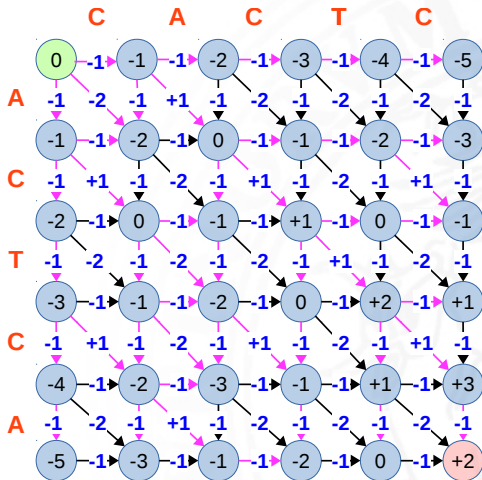
- ACTCA and CACTC.



Exercises

Try to align globally the following sequences:

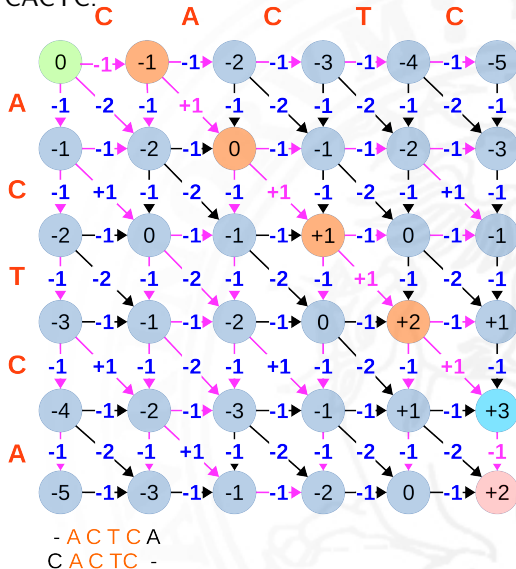
- ACTCA and CACTC.



Exercises

Try to align globally the following sequences:

- ACTCA and CACTC.



Exercises

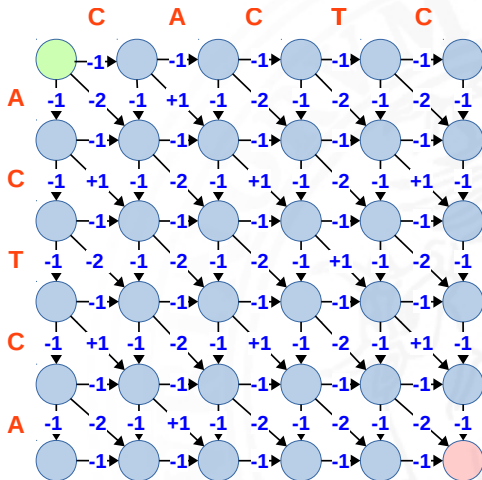
Try to align locally the following sequences:

- ACTCA and CACTC.

Exercises

Try to align locally the following sequences:

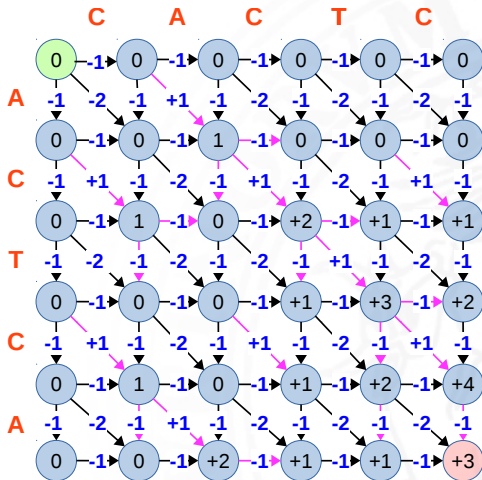
- ACTCA and CACTC.



Exercises

Try to align locally the following sequences:

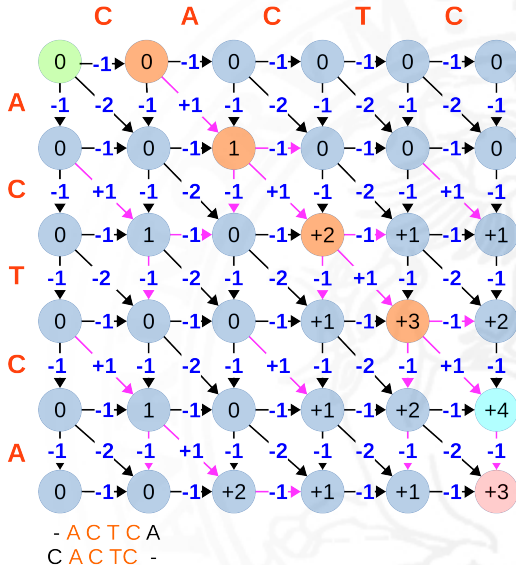
- ACTCA and CACTC.



Exercises

Try to align locally the following sequences:

- ACTCA and CACTC.



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

- ACCTG and TGATG;
- ACTCA and CACTC.

$$\text{score matrix} = \begin{bmatrix} 1 & -2 & -2 & -2 & -1 \\ -2 & 1 & -2 & -2 & -1 \\ -2 & -2 & 1 & -2 & -1 \\ -2 & -2 & -2 & 1 & -1 \\ -1 & -1 & -1 & -1 & - \end{bmatrix}$$

Exercises

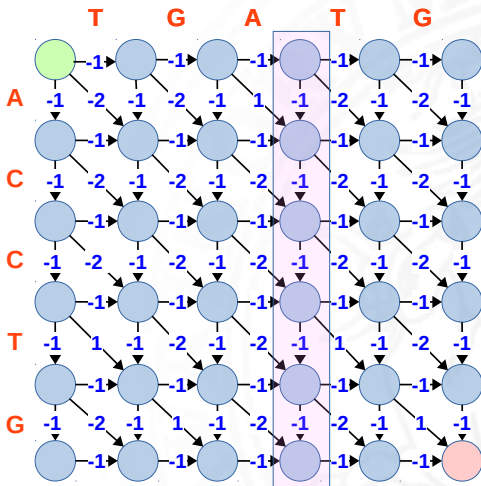
Try to align globally the following sequences using the Divide and Conquer approach:

- ACCTG and TGATG;

Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

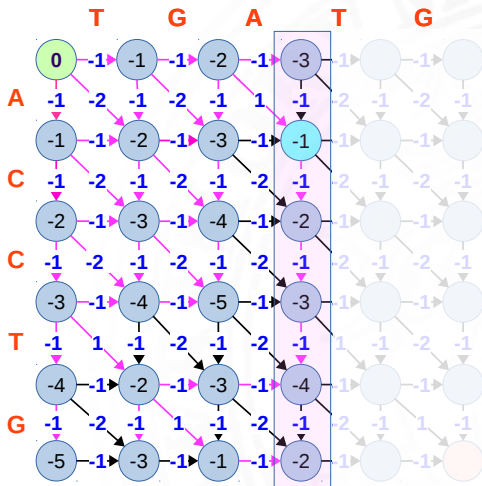
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

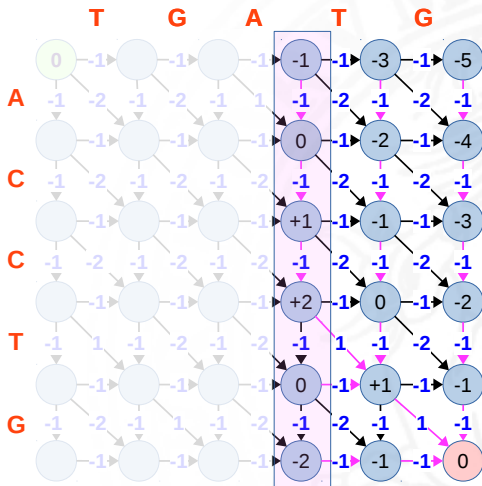
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

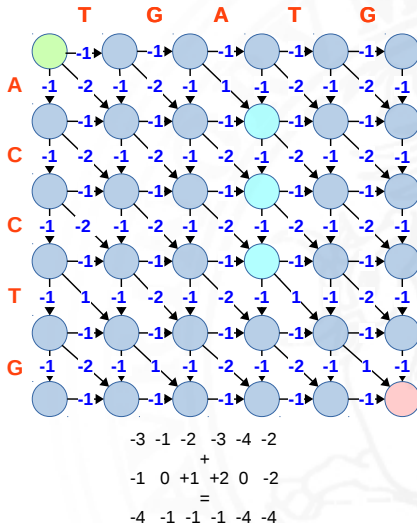
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

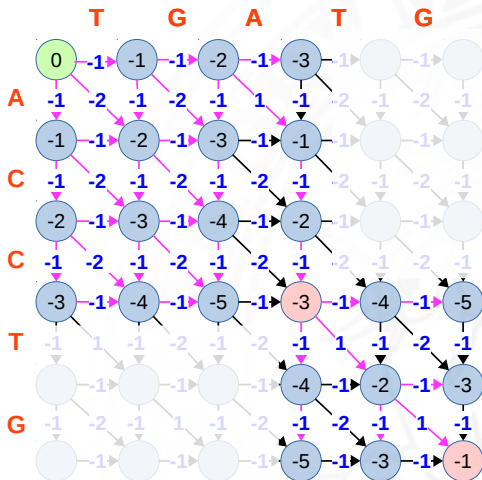
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

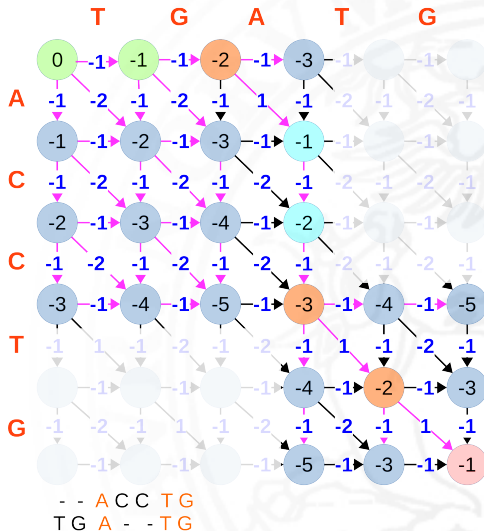
- ACCTG and TGATG;



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

- ACCTG and TGATG;



Exercises

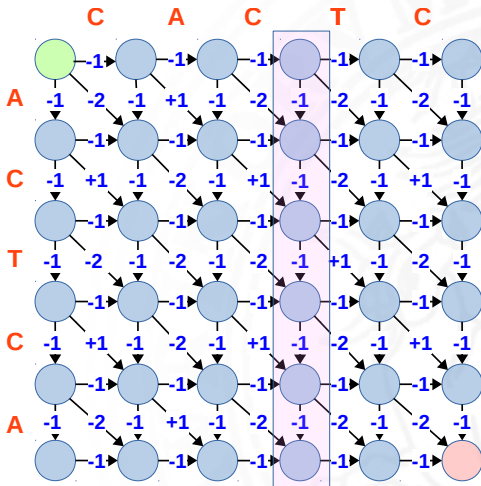
Try to align globally the following sequences using the Divide and Conquer approach:

- ACTCA and CACTC.

Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

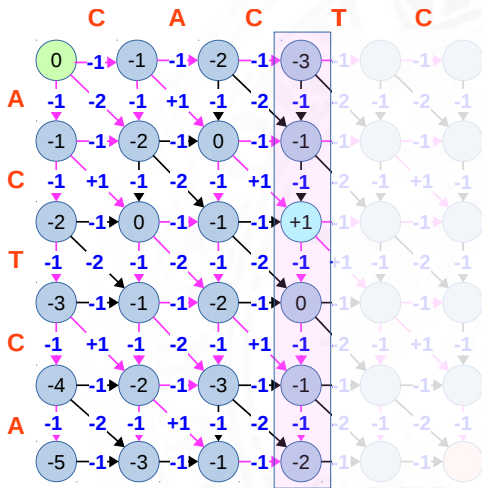
- ACTCA and CACTC.



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

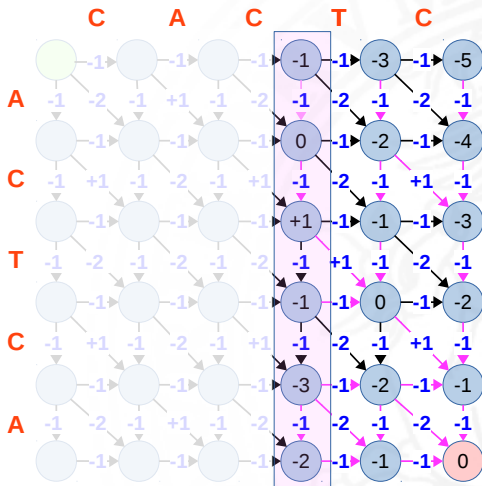
- ACTCA and CACTC.



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

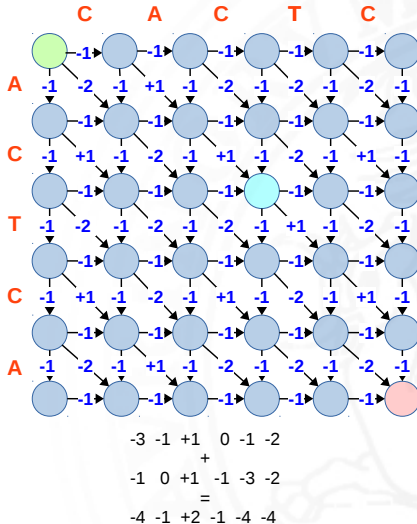
- ACTCA and CACTC.



Exercises

Try to align globally the following sequences using the Divide and Conquer approach:

- ACTCA and CACTC.



- ACTCA and CACTC.



Try to align globally the following sequences using the Divide and Conquer approach:

- ACTCA and CACTC.

