Dynamic Programming Example – local alignment

***Note: For all alignments, we will use a linear gap penalty of 4 points, a match score of +5 points, and a mismatch score of -1 point.***

Complete the dynamic programming matrix below to find the optimal local alignment score and optimal local alignment for PLANS and BANANA .

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | B | A | N | A | N | A |
|  |  |  |  |  |  |  |  |
| P |  |  |  |  |  |  |  |
| L |  |  |  |  |  |  |  |
| A |  |  |  |  |  |  |  |
| N |  |  |  |  |  |  |  |
| S |  |  |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Si,j = max{ |  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| 0 |  |  |  |