

Affine Base Cases (Global)

- $M[0, i]$ = “score of best alignment between 0 characters of x and i characters of y that ends in a match” = $-\infty$ because no such alignment can exist.

- $X[0, i]$ = “score of best alignment between 0 characters of x and i characters of y that ends in a gap in x ” = $\text{gap_start} + i \times \text{gap_extend}$ because this alignment looks like:

yyyyyyyyyy

- $X[i, 0]$ = “score of best alignment between i characters of x and 0 characters of y that ends in a gap in X ” = $-\infty$

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← not allowed

- $M[i, 0] = M[0, i]$ and $Y[0, i]$ and $Y[i, 0]$ are computed using the same logic as $X[i, 0]$ and $X[0, i]$