

After experimenting with *penalize\_extend\_when\_opening* and *penalize\_end\_gaps*, I still got the same global alignment score of 1810 when the parameter is set to dx.

When the parameter is set to ds, with both open and extend gap penalties equal to -4, then:

1. When *penalize\_extend\_when\_opening* = True and *penalize\_end\_gaps* = (False, False), the score = 10
2. When *penalize\_extend\_when\_opening* = True and *penalize\_end\_gaps* = (True, True), the score = -780
3. When *penalize\_extend\_when\_opening* = True and *penalize\_end\_gaps* = (True, False), the score = -775
4. When *penalize\_extend\_when\_opening* = True and *penalize\_end\_gaps* = (False, True), the score = -186
5. When *penalize\_extend\_when\_opening* = False and *penalize\_end\_gaps* = (False, False), the score = 108
6. When *penalize\_extend\_when\_opening* = False and *penalize\_end\_gaps* = (True, True), the score = -241
7. When *penalize\_extend\_when\_opening* = False and *penalize\_end\_gaps* = (True, False), the score = -240
8. When *penalize\_extend\_when\_opening* = False and *penalize\_end\_gaps* = (False, True), the score = 104