

```
1  function [segment_index_vector segment_match_count_vector] =
   local_alignment(A, B, segment_length, N)
2
3      num_segments = floor(N/segment_length);
4
5      for i = 1 : num_segments
6
7          indexes = (i-1)*segment_length + 1 : i*segment_length;
8          current_segment_A = A(indexes);
9
10         max_match_count = 0;
11
12         for j = 1 : N - 500
13
14             indexes = j : j + segment_length - 1;
15             current_segment_B = B(indexes);
16             [match_count, match_vector] =
               Count_Matching_Bases(current_segment_A, current_segment_B,
               segment_length);
17
18             if(match_count > max_match_count)
19
20                 max_match_count = match_count;
21                 segment_index_vector(i) = j;
22
23             endif
24
25         endfor
26
27         segment_match_count_vector(i) = max_match_count;
28
29     endfor
30
31 endfunction
```