

```
1 function s = calculate_std_dev(data_array,N)
2 %takes an array of vectors, and returns the standard deviation of the vectors
3
4 [ignore num_vectors] = size(data_array);
5
6 cnt = 1;
7
8 avg_vector = data_array{1};
9 avg_vector = avg_vector(1:N)*0; %initializes the vector to 0; this syntax is necessary to
    avoid errors with high-dimensional vectors
10
11 for i = 1 : num_vectors
12
13     x = data_array{i};
14     avg_vector = avg_vector + x(1:N);
15
16 endfor
17
18 avg_vector = avg_vector / num_vectors;
19
20 avg_distance = 0;
21
22 for i = 1 : num_vectors
23
24     x = data_array{i};
25     avg_distance = avg_distance + norm(avg_vector - x(1:N))^2;
26
27 endfor
28
29 s = sqrt(avg_distance / num_vectors);
30
31 endfunction
32
```