

```

1  function [data_categories_array] = generate_categories_MASS(dataset, delta)
2
3      num_items = size(dataset,2);
4      index = 1;
5      is_available = 1:num_items;
6
7      while(size(is_available,2) > 0) %iterates until all items have been assigned to a category
8
9          size(is_available,2)
10         queue = []; %stores the indices of the items added to the category
11         indices = []; %stores the indices of the is_available vector that need to be removed
12         cnt = 1;
13
14         anchor = dataset{is_available(1)};
15
16         queue(cnt) = is_available(1);
17         indices(cnt) = 1;
18         cnt = cnt + 1;
19
20         for i = 2 : size(is_available,2)
21
22             current = dataset{is_available(i)}; %loads the next available items
23
24             diff = diff_operator_MASS(anchor, current);
25
26             if(diff <= delta) %if true, then we have a match
27
28                 queue(cnt) = is_available(i); %we save the index, not the full item for efficiency
29                 indices(cnt) = i; %this entry in is_available will need to be removed
30                 cnt = cnt + 1;
31
32             endif
33
34         endfor
35
36         data_categories_array{index} = queue;
37         index = index + 1;
38         is_available(indices) = []; %removes the indices in is_available vector that
39         correspond to claimed items
40     endwhile
41
42 endfunction

```