```
1   // SPDX-License-Identifier: MIT
2   pragma solidity ^0.8.7;
3
4   contract MyDataStore {
5
6       struct Measurement {
7           string[] data;
8           string[]    timestamp;
9       }
10
11      struct Channel {
12          string id;
13          mapping(string => Measurement) measurement;
14      }
15
16      mapping(string => Channel) channel_list;
17
18      function put_data(string calldata channel, string calldata measurement, string calldata timestamp, string calldata data) public {
19          Channel storage ch = channel_list[channel];
20          ch.id = channel;
21          Measurement storage m =   ch.measurement[measurement];
22          m.data.push(data);
23          m.timestamp.push(timestamp);
24      }
25
26      function get_data_num(string calldata channel, string calldata measurement) public view returns(uint) {
27          Measurement memory data = channel_list[channel].measurement[measurement];
28          return data.data.length;
29      }
30      function get_data(string calldata channel, string calldata measurement, uint start, uint stop) public view returns(Measurement
memory) {
31          Measurement memory data = channel_list[channel].measurement[measurement];
32          Measurement memory m;
33          uint data_num = data.data.length;
34          if (start > data_num) {
35              return m;
36          }
37          stop++;
38          if (stop > data_num) {
39              stop = data_num;
```

```
40                  }
41                  uint num = stop - start;
42                  m.data = new string[](num);
43                  m.timestamp = new string[](num);
44                  for (uint i = 0; i < num; i++) {
45                      m.data[i] = data.data[start+i];
46                      m.timestamp[i] = data.timestamp[start+i];
47                  }
48                  return m;
49              }
50
51      }
52
```