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1  #!/usr/bin/env python
2  import logging
3  import numpy
4  import csv
5  from config import *
6  import pycrowder.extractors as extractors
7
8  def main():
9      global extractorName, messageType, rabbitmqExchange, rabbitmqURL, logger,
      registrationEndpoints
10
11     # Set logging
12     logging.basicConfig(format='%(asctime)-15s %(levelname)-7s : %(name)s -
      %(message)s', level=logging.WARN)
13     logging.getLogger('pycrowder.extractors').setLevel(logging.INFO)
14     logger = logging.getLogger('extractor')
15     logger.setLevel(logging.DEBUG)
16
17     extractors.setup(extractorName=extractorName, messageType=messageType,
      rabbitmqURL=rabbitmqURL,
18                     rabbitmqExchange=rabbitmqExchange)
19
20     # Register extractor
21     extractors.register_extractor(registrationEndpoints)
22
23     # Connect to extractor and wait for files
24     extractors.connect_message_bus(extractorName=extractorName, messageType=messageType,
25                                   rabbitmqURL=rabbitmqURL,
26                                   rabbitmqExchange=rabbitmqExchange,
27                                   processFileFunction=process_file,
28                                   checkMessageFunction=None)
29
30 def process_file(parameters):
31     global field_name
32
33     inputfile = parameters['inputfile']
34
35     mean_desc = 'Mean total monthly precipitation'
36     median_desc = 'Median total monthly precipitation'
37     standard_dev_desc = 'Standard deviation of total monthly precipitation'
38
39     # Initialize a records list and field name
40     records = list()
41     field_name = 'TPCP'
42
43     # Read csv file contents into a variable
44     csv_file = open(inputfile, 'rb')
45     data_table = csv.DictReader(csv_file)
46
47     # Read each row of the table and append the data into records array
48     for data_row in data_table:
49         records.append(float(data_row[field_name]))
50
51     # Calculate mean, median and standard deviation and upload it back as metadata to
52     Clowder
53     mean = numpy.mean(records)
54     median = numpy.median(records)
55     std = numpy.std(records)
56
57     # Context url
58     context_url = "https://clowder.ncsa.illinois.edu/contexts/metadata.jsonld"
59
60     # Store results as metadata
61     metadata = {
62         "@context": [context_url,

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60         {
61             "mean": "http://clowder.ncsa.illinois.edu/" + extractorName +
62                 "#mean",
63             "median": "http://clowder.ncsa.illinois.edu/" + extractorName
64                 + "#median",
65             "std": "http://clowder.ncsa.illinois.edu/" + extractorName +
66                 "#std",
67             "value": "http://clowder.ncsa.illinois.edu/" + extractorName +
68                 "#value",
69             "description": "http://clowder.ncsa.illinois.edu/" +
70                 extractorName + "#description"
71         }],
72     "attachedTo": {"resourceType": "file", "id": parameters["fileid"]},
73     "agent": {
74         "@type": "cat:extractor",
75         "extractor_id":
76             "https://clowder.ncsa.illinois.edu/clowder/api/extractors/" + extractorName
77     },
78     "content": {
79         "mean": {
80             "value": round(mean, 3),
81             "description": mean_desc
82         },
83         "median": {
84             "value": round(median, 3),
85             "description": median_desc
86         },
87         "std": {
88             "value": round(std, 3),
89             "description": standard_dev_desc
90         }
91     }
92 }
93
94 # upload metadata
95 extractors.upload_file_metadata_jsonld(mdata=metadata, parameters=parameters)
96 logger.info("Uploaded metadata %s", metadata)
97
98 if __name__ == '__main__':
99     main()

```