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1 import sqlite3
2 from threading import Lock
3
4 class BDHandler():
5     """
6     Classe para a manipulação do banco de dados
7     """
8     def __init__(self,dbpath,tags,tablename='dataTable'):
9         """
10        Construtor
11        """
12        self._dbpath = dbpath
13        self._tablename = tablename
14        self._con = sqlite3.connect(self._dbpath,check_same_thread=False)
15        self._cursor = self._con.cursor()
16        self._col_names = tags.keys()
17        self._lock = Lock()
18        self.createTable()
19
20    def __del__(self):
21        self._con.close()
22
23    def createTable(self):
24        """
25        Método que cria a tabela para armazenamento dos dados caso ela não exista
26        """
27        try:
28            sql_str = f"""
29            CREATE TABLE IF NOT EXISTS {self._tablename} (
30                id INTEGER NOT NULL PRIMARY KEY AUTOINCREMENT,
31                timestamp TEXT NOT NULL,
32                """
33            for n in self._col_names:
34                sql_str += f'{n} REAL,'
35
36            sql_str = sql_str[:-1]
37            sql_str += ');'
38            self._lock.acquire()
39            self._cursor.execute(sql_str)
40            self._con.commit()
41            self._lock.release()
42        except Exception as e:
43            print("Erro: ",e.args)
44
45    def insertData(self, data):
46        """
47        Método para inserção dos dados no BD
48        """
49        try:
50            self._lock.acquire()
51            timestamp = str(data['timestamp'])
52            str_cols = 'timestamp,' + ','.join(data['values'].keys())
53            str_values = f'''{timestamp}'," + ','.join([str(data['values'][k]) for k
in data['values'].keys()])
54            sql_str = f'INSERT INTO {self._tablename} ({str_cols}) VALUES
({str_values});'

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55         self._cursor.execute(sql_str)
56         self._con.commit()
57     except Exception as e:
58         print("Erro: ",e.args)
59     finally:
60         self._lock.release()
61
62
63
64     def selectData(self, cols, init_t, final_t):
65         """
66         Método que realiza a busca no BD entre 2 horários especificados
67         """
68         try:
69             self._lock.acquire()
70             sql_str = f"SELECT {','.join(cols)} FROM {self._tablename} WHERE
timestamp BETWEEN '{init_t}' AND '{final_t}'"
71             self._cursor.execute(sql_str)
72             dados = dict((sensor,[]) for sensor in cols)
73             for linha in self._cursor.fetchall():
74                 for d in range(0,len(linha)):
75                     dados[cols[d]].append(linha[d])
76             return dados
77         except Exception as e:
78             print("Erro: ",e.args)
79         finally:
80             self._lock.release()
81
82
83

```