QA. Python, Sem1, Assignment_1

Task 1.

Create in-memory File System (FS). The file system consists of 4 types of nodes:

1) Directory - can contain other directories and files. Directory can be empty or can have some elements. Number of elements in the directory should be <= DIR_MAX_ELEMS
   Allowed operations:
   - Create directory
   - Delete directory
   - List files and subdirectories
   - Move file or subdirectory to another location
2) Binary file - just an immutable file that contains some information.
   Allowed operations:
   - Create file
   - Delete file
   - Move file
   - Readfile (returns file content)
3) Log text file - a text file that can be modified by appending lines to the end of the file.
   Allowed operations:
   - Create file
   - Delete file
   - Move file
   - Readfile (returns file content)
   - Append a line to the end of the file
4) Buffer file - this is a special type of file that works like a queue. Some threads push elements to the file the other pop elements from the file. The number of element in the file is <= MAX_BUF_FILE_SIZE

   Allowed operations:
   - Create file

- Delete file
- Move file
- Push element
- Consume element

Task 2.

Using the API defined above create some file system topology that contains at least 2 nested folders and several instances of all types of the FS nodes

IMPORTANT:

The assignment should be done step by step:

1) Create a prototype of the system (this is just signatures of functions without implementation. It is not possible to create tests if you don't do this step. But this is not full implementation)
2) Create Tests (PyTest or Robot)
3) Provide implementation
4) Bugfixes

So, there should be at least 4 commits.

DEADLINE 1 am, 12 Nov, 2022. (Last commit) - 30 points

In one week after deadline - 20 points
In two weeks and later - 15 points