Doc Version : 1.0

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Freshworks Backend – Assignment

Files Available

- DataStoreLib.py
- Client_FunctionalTestCases.py
- Client_NonFunctionalTestCases.py
- SecondClientProcess.py
- Run FunctionalTest.bat
- Run NonFunctionalTest.bat
- Run FunctionalTest.sh
- Run NonFunctionalTest.sh

S/W Requirement

Python 3.4

H/W Requirement

- 2 GB of RAM or above
- 1 GB of Free DiskSpace or above

Environments Tested

- Windows
- Linux

Test Execution

- Windows :
  - Run FunctionalTest.bat → For Running Functional Test Case
  - Run NonFunctionalTest.bat → For Running Non Functional Test Case

Test Output

- FunctionalTest.out
- NonFunctionalTest.out

Addiotional Details

Library : DataStoreLib.py

Classes : InitDataStore, ManipulateDataSource

InitDataStore

Constructor : __init__

Destructor : __del__

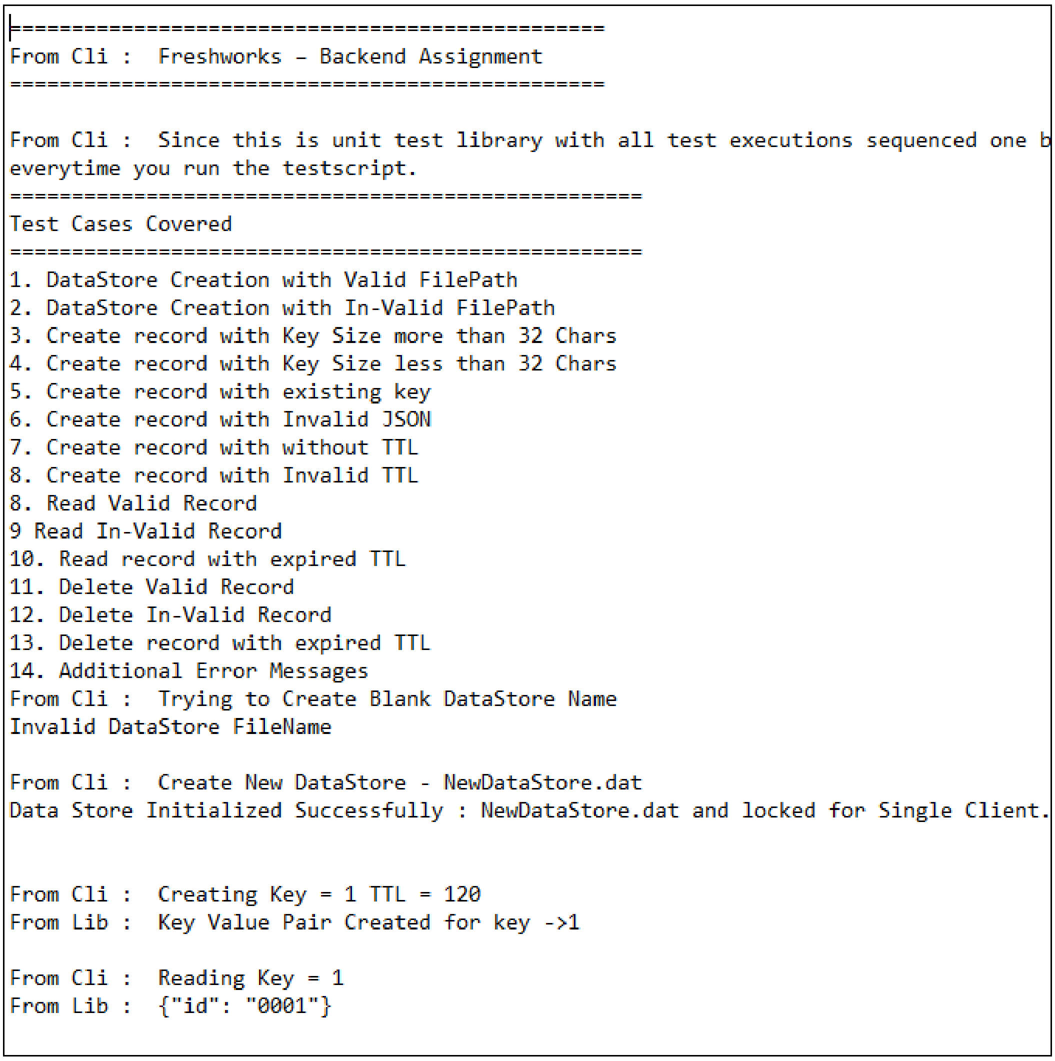
Methods : getdatastorepath()

ManipulateDataSource

Constructor : __init__

Methods : createDataStoreRecord(), createKeyValuePair()
readKeyValuePair(), deleteKeyValuePair()

Screenshots – Windows



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From Cli :  Freshworks - Backend Assignment
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From Cli :  Since this is unit test library with all test executions sequenced one b
everytime you run the testscript.
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Test Cases Covered
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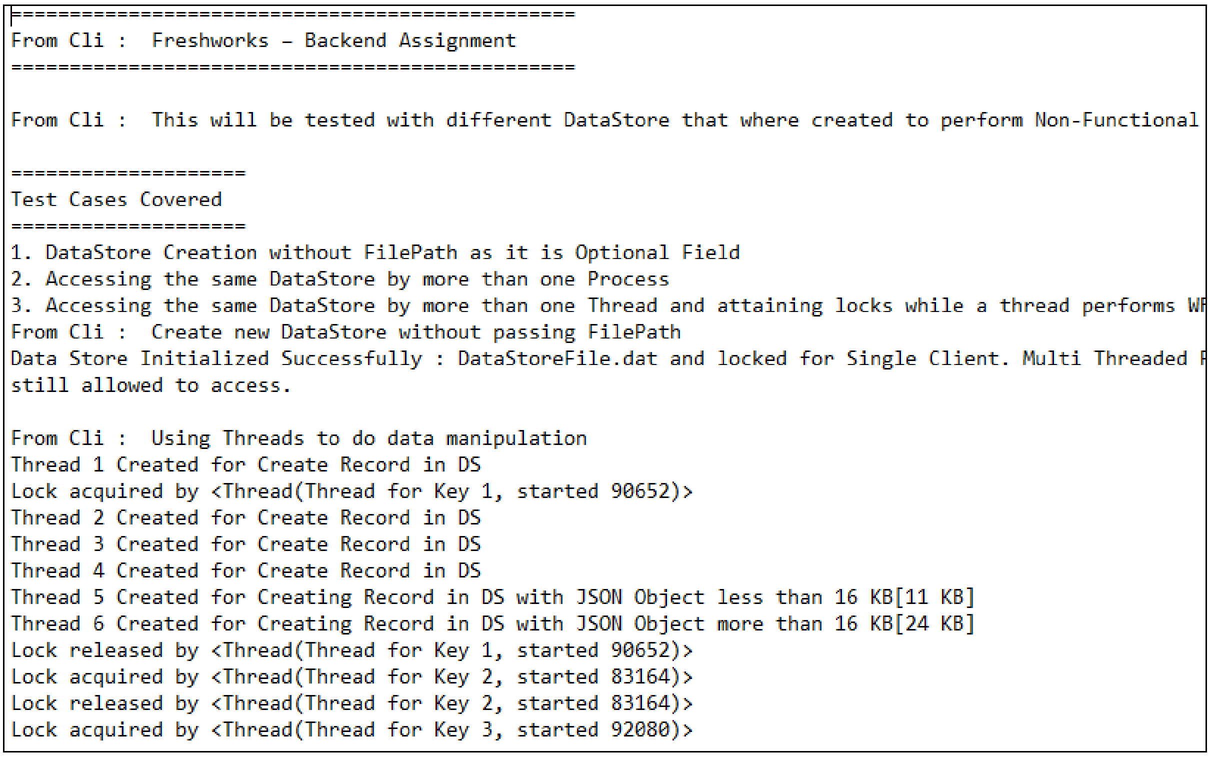
1. DataStore Creation with Valid FilePath
2. DataStore Creation with In-Valid FilePath
3. Create record with Key Size more than 32 Chars
4. Create record with Key Size less than 32 Chars
5. Create record with existing key
6. Create record with Invalid JSON
7. Create record with without TTL
8. Create record with Invalid TTL
8. Read Valid Record
9 Read In-Valid Record
10. Read record with expired TTL
11. Delete Valid Record
12. Delete In-Valid Record
13. Delete record with expired TTL
14. Additional Error Messages
From Cli :  Trying to Create Blank DataStore Name
Invalid DataStore FileName

From Cli :  Create New DataStore - NewDataStore.dat
Data Store Initialized Successfully : NewDataStore.dat and locked for Single Client.


From Cli :  Creating Key = 1 TTL = 120
From Lib :  Key Value Pair Created for key ->1

From Cli :  Reading Key = 1
From Lib :  {"id": "0001"}
```



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From Cli :  Freshworks - Backend Assignment
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From Cli :  This will be tested with different DataStore that where created to perform Non-Functional

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Test Cases Covered
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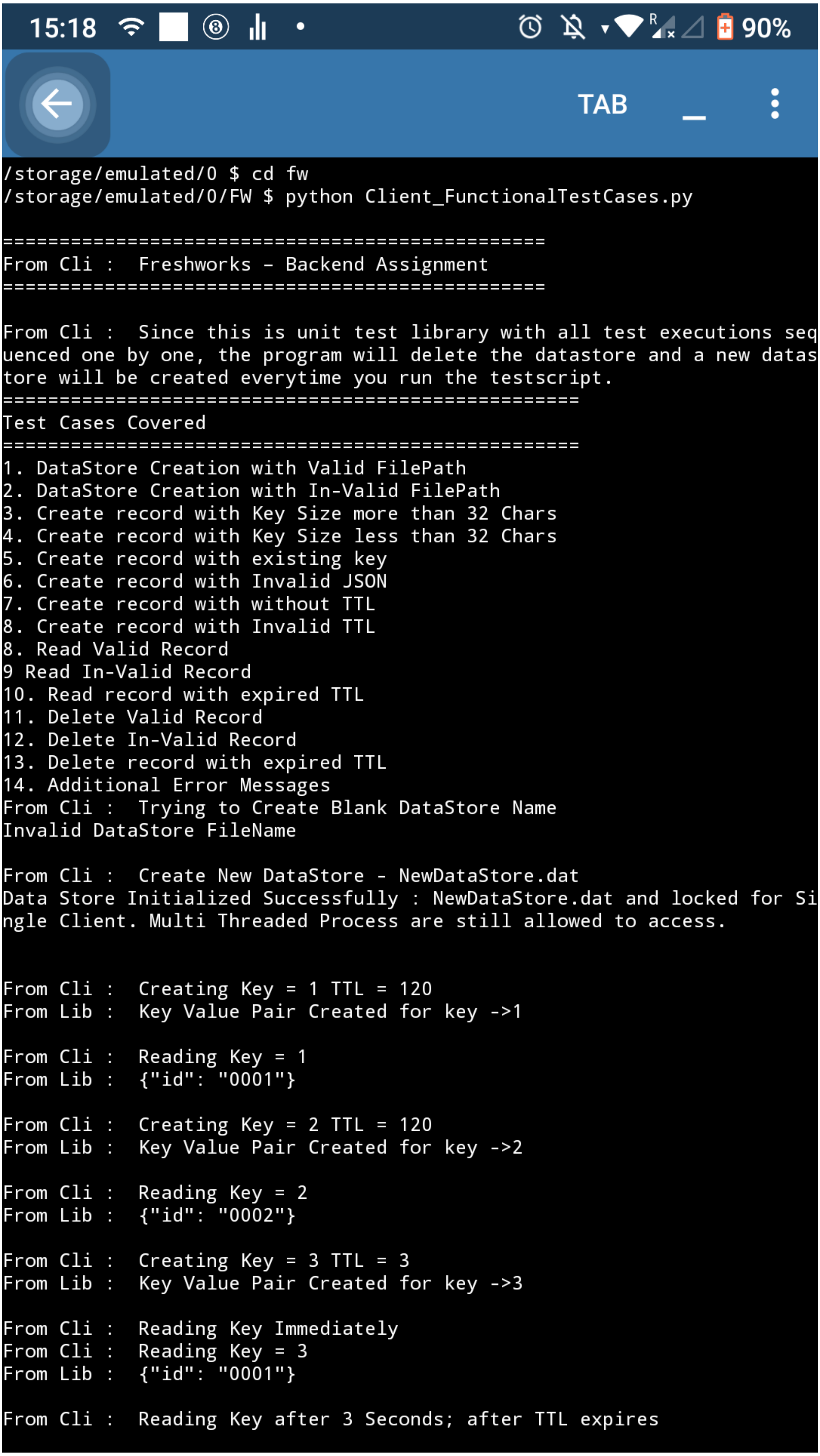
1. DataStore Creation without FilePath as it is Optional Field
2. Accessing the same DataStore by more than one Process
3. Accessing the same DataStore by more than one Thread and attaining locks while a thread performs W
From Cli :  Create new DataStore without passing FilePath
Data Store Initialized Successfully : DataStoreFile.dat and locked for Single Client. Multi Threaded
still allowed to access.

From Cli :  Using Threads to do data manipulation
Thread 1 Created for Create Record in DS
Lock acquired by <Thread(Thread for Key 1, started 90652)>
Thread 2 Created for Create Record in DS
Thread 3 Created for Create Record in DS
Thread 4 Created for Create Record in DS
Thread 5 Created for Creating Record in DS with JSON Object less than 16 KB[11 KB]
Thread 6 Created for Creating Record in DS with JSON Object more than 16 KB[24 KB]
Lock released by <Thread(Thread for Key 1, started 90652)>
Lock acquired by <Thread(Thread for Key 2, started 83164)>
Lock released by <Thread(Thread for Key 2, started 83164)>
Lock acquired by <Thread(Thread for Key 3, started 92080)>
```

Screenshots – Linux



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/storage/emulated/0 $ cd fw
/storage/emulated/0/FW $ python Client_FunctionalTestCases.py

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From Cli :  Freshworks - Backend Assignment
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From Cli :  Since this is unit test library with all test executions seq
uenced one by one, the program will delete the datastore and a new datas
tore will be created everytime you run the testscript.
===================================================
Test Cases Covered
===================================================
1. DataStore Creation with Valid FilePath
2. DataStore Creation with In-Valid FilePath
3. Create record with Key Size more than 32 Chars
4. Create record with Key Size less than 32 Chars
5. Create record with existing key
6. Create record with Invalid JSON
7. Create record with without TTL
8. Create record with Invalid TTL
8. Read Valid Record
9 Read In-Valid Record
10. Read record with expired TTL
11. Delete Valid Record
12. Delete In-Valid Record
13. Delete record with expired TTL
14. Additional Error Messages
From Cli :  Trying to Create Blank DataStore Name
Invalid DataStore FileName

From Cli :  Create New DataStore - NewDataStore.dat
Data Store Initialized Successfully : NewDataStore.dat and locked for Si
ngle Client. Multi Threaded Process are still allowed to access.


From Cli :  Creating Key = 1 TTL = 120
From Lib :  Key Value Pair Created for key ->1

From Cli :  Reading Key = 1
From Lib :  {"id": "0001"}

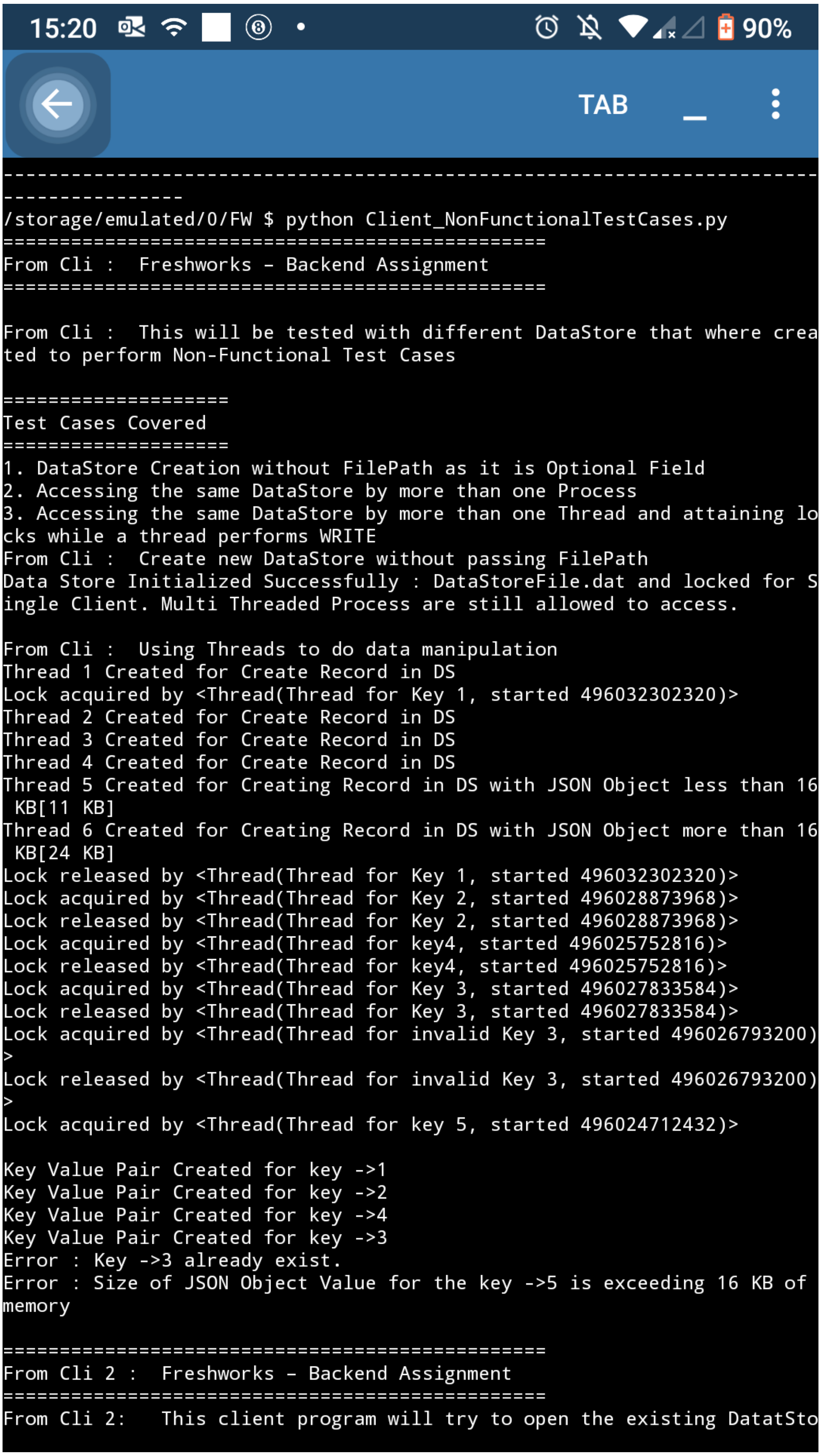
From Cli :  Creating Key = 2 TTL = 120
From Lib :  Key Value Pair Created for key ->2

From Cli :  Reading Key = 2
From Lib :  {"id": "0002"}

From Cli :  Creating Key = 3 TTL = 3
From Lib :  Key Value Pair Created for key ->3

From Cli :  Reading Key Immediately
From Cli :  Reading Key = 3
From Lib :  {"id": "0001"}

From Cli :  Reading Key after 3 Seconds; after TTL expires
```



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/storage/emulated/0/FW $ python Client_NonFunctionalTestCases.py
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From Cli :  Freshworks - Backend Assignment
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From Cli :  This will be tested with different DataStore that where crea
ted to perform Non-Functional Test Cases

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Test Cases Covered
====================
1. DataStore Creation without FilePath as it is Optional Field
2. Accessing the same DataStore by more than one Process
3. Accessing the same DataStore by more than one Thread and attaining lo
cks while a thread performs WRITE
From Cli :  Create new DataStore without passing FilePath
Data Store Initialized Successfully : DataStoreFile.dat and locked for S
ingle Client. Multi Threaded Process are still allowed to access.

From Cli :  Using Threads to do data manipulation
Thread 1 Created for Create Record in DS
Lock acquired by <Thread(Thread for Key 1, started 496032302320)>
Thread 2 Created for Create Record in DS
Thread 3 Created for Create Record in DS
Thread 4 Created for Create Record in DS
Thread 5 Created for Creating Record in DS with JSON Object less than 16
 KB[11 KB]
Thread 6 Created for Creating Record in DS with JSON Object more than 16
 KB[24 KB]
Lock released by <Thread(Thread for Key 1, started 496032302320)>
Lock acquired by <Thread(Thread for Key 2, started 496028873968)>
Lock released by <Thread(Thread for Key 2, started 496028873968)>
Lock acquired by <Thread(Thread for key4, started 496025752816)>
Lock released by <Thread(Thread for key4, started 496025752816)>
Lock acquired by <Thread(Thread for Key 3, started 496027833584)>
Lock released by <Thread(Thread for Key 3, started 496027833584)>
Lock acquired by <Thread(Thread for invalid Key 3, started 496026793200)
>
Lock released by <Thread(Thread for invalid Key 3, started 496026793200)
>
Lock acquired by <Thread(Thread for key 5, started 496024712432)>

Key Value Pair Created for key ->1
Key Value Pair Created for key ->2
Key Value Pair Created for key ->4
Key Value Pair Created for key ->3
Error : Key ->3 already exist.
Error : Size of JSON Object Value for the key ->5 is exceeding 16 KB of
memory

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From Cli 2 :  Freshworks - Backend Assignment
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From Cli 2:   This client program will try to open the existing DatatSto
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Output Files

Refer /output/