**Requirements**

1. pytest

2. nfs4 share should be mount to /mnt/nfs

**Test Documentation**

Test01: Check correct changing file permissions. Test verifies that after run change\_file\_permissions method with 0764 permissions, method get\_file\_permissions return us exact the same file permissions(0764).

Test02: Check if number of inodes increase after files was deleted. Test create some files in out test directory, than store current number of directory inodes and than compare it with inodes number of the same directory after deleting all files from it.

Test03: Check number of created files. Test delete all files from test directory, than create some files, makes a list of test directory with names of files. The last step – comparing list length with number of created files.

Test04: Check if number of inodes decrease after creating files. Test stores current inode number, than creates some files and check if current inodes number less than previous.

Test05: Check if directory is empty. Test checks if directory is empty after deleting all files from it.

Test06: Check if file is not empty. Test creates some file in test directory, that takes the first of files and checks if it is empty.

Test07: Check if directory is not empty. Test creates some files in test directory than checks if directory is not empty.

**Source code of the test suite**

test01.py:

import logging

from ..classes.fs\_operations import FSOperations

class Test01(object):

def test\_change\_file\_permissions(self):

'''

This method checks correct changing file permissions

'''

logging.info('Testing file permissions change')

FSOperations().create\_files(5)

assert FSOperations().change\_file\_permissions(0444) == FSOperations().get\_file\_permission(), \

'Should return permissions 0444'

FSOperations().change\_file\_permissions(0644)

test02.py:

import logging

import os

from ..classes.fs\_operations import FSOperations

class Test02(object):

def test\_inode\_increase(self):

'''

This method checks if number of inodes increased when files deleted

'''

logging.info('Testing inode increase')

FSOperations.create\_files(1)

inodes\_left = os.statvfs('/mnt/nfs').f\_favail

FSOperations().delete\_files()

assert os.statvfs('/mnt/nfs').f\_favail > inodes\_left, 'Should be bigger number of inodes'

test03.py:

import logging

import os

from ..classes.fs\_operations import FSOperations

class Test03(object):

def test\_number\_of\_created\_files(self):

'''

This method checks number of created files

'''

logging.info('Testing number of created files')

FSOperations().delete\_files()

FSOperations().create\_files(2)

WORK\_DIR = '/mnt/nfs/test\_files/'

filelist = [f for f in os.listdir(WORK\_DIR) if f.endswith('.txt')]

assert len(filelist) == 2, 'Should be equal to 2'

test04.py:

import logging

import os

from ..classes.fs\_operations import FSOperations

class Test04(object):

def test\_inode\_decrease(self):

'''

This method checks if number of inodes decrease if new files created

'''

logging.info('Testing inode decrease')

inodes\_left = os.statvfs('/mnt/nfs').f\_favail

FSOperations().create\_files(20)

assert os.statvfs('/mnt/nfs').f\_favail < inodes\_left, 'Should be less number of inodes'

test05.py:

import logging

import os

from ..classes.fs\_operations import FSOperations

class Test05(object):

def test\_empty\_directory(self):

'''

This method checks if directory is empty

'''

logging.info('Testing that directory empty')

WORK\_DIR = '/mnt/nfs/test\_files/'

FSOperations().delete\_files()

assert os.listdir(WORK\_DIR) == []

test06.py:

import logging

import os

from ..classes.fs\_operations import FSOperations

class Test06(object):

def test\_empty\_file(self):

'''

This method checks if file is not empty

'''

logging.info('Testing empty file')

WORK\_DIR = '/mnt/nfs/test\_files/'

FSOperations().create\_files(5)

filelist = [f for f in os.listdir(WORK\_DIR) if f.endswith('.txt')]

os.chdir(WORK\_DIR)

assert os.stat(filelist[0]).st\_size != 0, 'Should be not empty'

test07.py:

import logging

import os

from ..classes.fs\_operations import FSOperations

class Test07(object):

def test\_not\_empty\_directory(self):

'''

This method checks if directory is not empty

'''

logging.info('Testing that directory not empty')

WORK\_DIR = '/mnt/nfs/test\_files/'

FSOperations().create\_files(5)

assert os.listdir(WORK\_DIR) != []

**Logs of the latest successful tests execution**

/usr/bin/python2.7 /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/tests\_main.py

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test01.py .

=========================== 1 passed in 0.14 seconds ===========================

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test02.py F

=================================== FAILURES ===================================

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Test02.test\_inode\_increase \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

self = <bin.test\_classes.test02.Test02 object at 0x7f0c4d063610>

def test\_inode\_increase(self):

'''

This method checks if number of inodes increased when files deleted

'''

logging.info('Testing inode increase')

> FSOperations.create\_files(1)

E TypeError: unbound method create\_files() must be called with FSOperations instance as first argument (got int instance instead)

test\_classes/test02.py:12: TypeError

--------------------------------- Captured log ---------------------------------

test02.py 11 INFO Testing inode increase

=========================== 1 failed in 0.01 seconds ===========================

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test03.py .

=========================== 1 passed in 0.04 seconds ===========================

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test04.py .

=========================== 1 passed in 0.23 seconds ===========================

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test05.py .

=========================== 1 passed in 0.04 seconds ===========================

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test06.py .

=========================== 1 passed in 0.07 seconds ===========================

/home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin

============================= test session starts ==============================

platform linux2 -- Python 2.7.6 -- py-1.4.27 -- pytest-2.7.1

rootdir: /home/ymarchanka/PycharmProjects/pycharm/EPAM\_python\_tests/bin/test\_classes, inifile:

plugins: capturelog

collected 1 items

test\_classes/test07.py .

=========================== 1 passed in 0.06 seconds ===========================

Process finished with exit code 0