Студент: Кириллова Христина
Группа:ИУ5-32Б
Вариант:11Б

Рубежный контроль №2 по дисциплине “Базовые компоненты интернет-технологий”

Текст программы

Файл func.py:

```python
from classes.programm import Programm
from classes.computer import Computer
from classes.programm_computer import ProgrammComputer

from operator import itemgetter


def one_to_many(computers, programms):
    ans = [(p.name, p.size_MB, c.name)
        for c in computers
        for p in programms
        if p.computer_id==c.id]
    return ans

def many_to_many(computers, programms, programms_computers):
    many_to_many_temp = [(c.id, c.name, pc.programm_id)
        for c in computers
        for pc in programms_computers
        if c.id==pc.computer_id]

    ans = [(p.name, p.size_MB, c_name)
        for p in programms
        for c_id, c_name, p_id in many_to_many_temp
        if p.id==p_id]
    return ans

def task_1(otm):
    return sorted(otm, key=itemgetter(0))

def task_2(computers, otm):
    ans = []
    for i in range(len(computers)):
        cnt_programms = 0
        for j in otm:
            if(j[2] == computers[i].name):
                cnt_programms += 1
        ans.append((computers[i].name, cnt_programms))
```

```
    for i in range(len(computers)):
        cnt_programms = 0
        for j in otm:
            if(j[2] == computers[i].name):
                cnt_programms += 1
        ans.append((computers[i].name, cnt_programms))
    ans = sorted(ans, key=itemgetter(1), reverse=True)
    return ans

def task_3(mtm):
    ans = []
    for el in mtm:
        if(el[1] > 300):
            ans.append(el)
    return ans

```

Файл tests.py:

```
import pytest
from func import *

programms = [
    Programm(1, 'Yandex Browser', 167, 1),
    Programm(2, 'Telegram', 366, 1),
    Programm(3, 'Word', 372, 1),
    Programm(4, 'Firefox Browser', 249.5, 2),
    Programm(5, 'VS Code', 238.8, 2),
    Programm(6, 'IDEA Community', 1234, 2),
    Programm(7, 'Drawio', 234.7, 3),
    Programm(8, 'OneNote', 344, 4),
]

# Сотрудники
computers = [
    Computer(1, 'PC1'),
    Computer(2, 'PC2'),
    Computer(3, 'PC3'),
    Computer(4, 'PC4'),
]

programms_computers = [
    ProgrammComputer(1,1),
    ProgrammComputer(1,2),
    ProgrammComputer(1,3),
    ProgrammComputer(2,4),
    ProgrammComputer(2,5),
    ProgrammComputer(2,6),
    ProgrammComputer(3,7),
    ProgrammComputer(4,8),
    ProgrammComputer(1,7),
    ProgrammComputer(3,6),
    ProgrammComputer(3,2),
    ProgrammComputer(4,5),
    ProgrammComputer(5,6),
]
```

```python

def test_1():
    otm = one_to_many(computers, programms)
    t1 = task_1(otm)
    assert [el[0] for el in t1] == ['Drawio', 'Firefox Browser', 'IDEA Community', 'OneNote','Telegra

def test_2():
    otm = one_to_many(computers, programms)
    t2 = task_2(computers, otm)
    assert t2 == [('PC1', 3), ('PC2', 3), ('PC3', 1), ('PC4', 1)]

def test_3():
    mtm = many_to_many(computers, programms, programms_computers)
    t3 = [el[0] for el in task_3(mtm)]
    assert 'Telegram' in t3
    assert 'Word' in t3
    assert 'OneNote' in t3
    assert 'IDEA Community' in t3

```

Результат работы тестов

```
khristina@khristina-HP-Pavilion-Laptop-14-dv0xxx:~/repos/BKIT2022/code_rk2$ pytest -v tests.py
============================================= test session starts ==============================================
platform linux -- Python 3.10.6, pytest-7.2.0, pluggy-1.0.0 -- /usr/bin/python3
cachedir: .pytest_cache
rootdir: /home/khristina/repos/BKIT2022/code_rk2
plugins: bdd-6.1.1, anyio-3.6.2
collected 3 items

tests.py::test_1 PASSED                                                                              [ 33%]
tests.py::test_2 PASSED                                                                              [ 66%]
tests.py::test_3 PASSED                                                                              [100%]
```