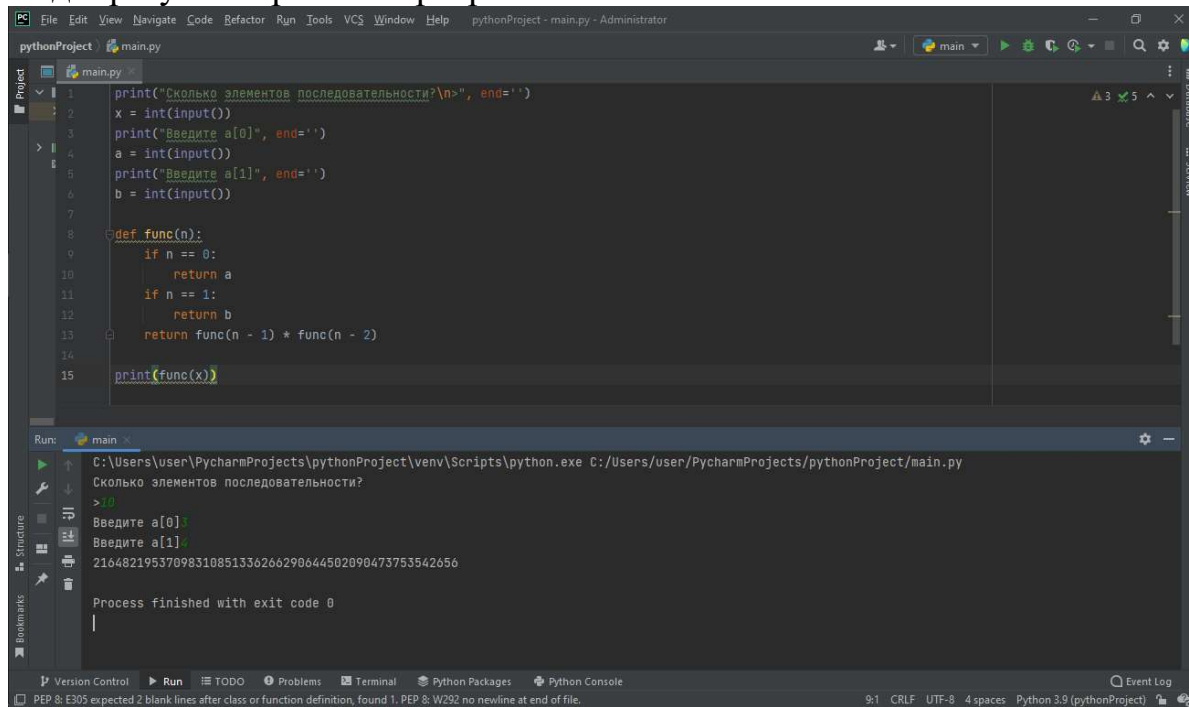


Задание:

х чисел, сформированных по правилу  $a_0=A$   $a_1=B$ ,  $a_2= a_0*a_1$ ,  $a_3=a_1*a_2$ , .....

Код и результат работы программы:



The screenshot shows the PyCharm IDE with a Python file named `main.py`. The code defines a recursive function `func(n)` that calculates the product of the first `n` elements of a sequence. The sequence starts with `a0=A` and `a1=B`, and subsequent elements are the product of the two preceding ones. The program prompts the user for the number of elements, then for `a0` and `a1`, and finally prints the result of `func(x)`.

```
1 print("Сколько элементов последовательности?\n>", end='')
2 x = int(input())
3 print("Введите a[0]", end='')
4 a = int(input())
5 print("Введите a[1]", end='')
6 b = int(input())
7
8 def func(n):
9     if n == 0:
10        return a
11    if n == 1:
12        return b
13    return func(n - 1) * func(n - 2)
14
15 print(func(x))
```

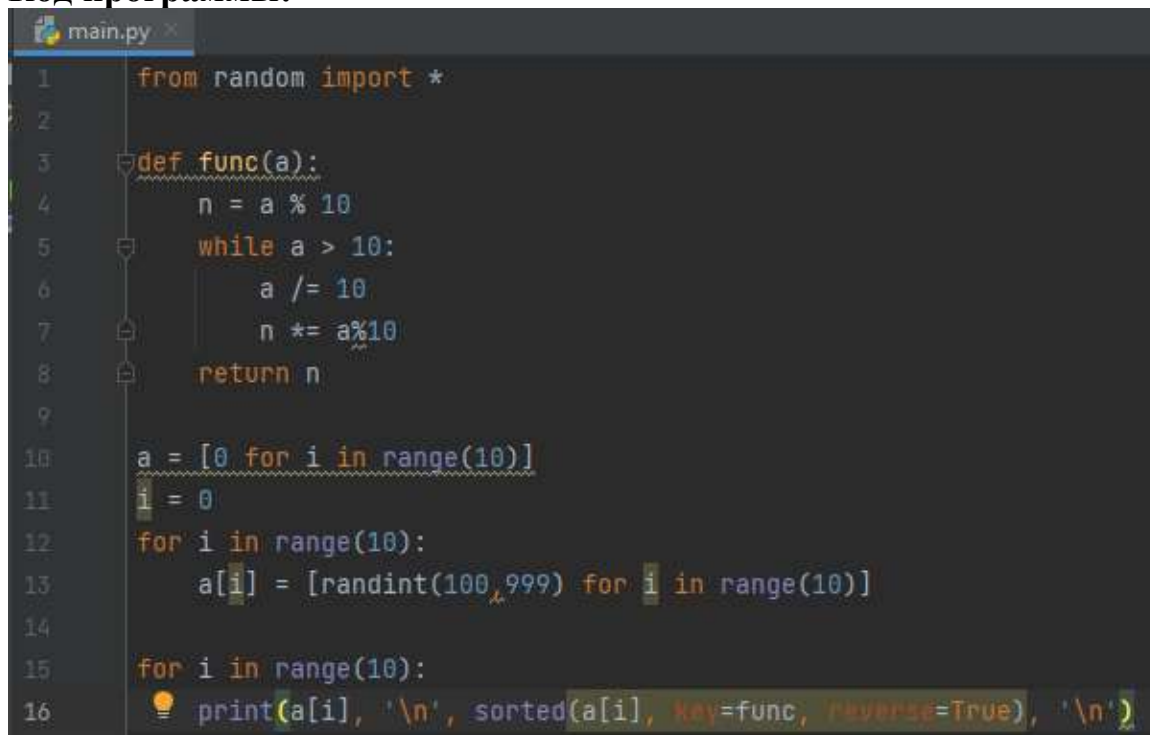
The Run window shows the execution output:

```
C:\Users\user\PycharmProjects\pythonProject\venv\Scripts\python.exe C:/Users/user/PycharmProjects/pythonProject/main.py
Сколько элементов последовательности?
>10
Введите a[0]3
Введите a[1]4
21648219537098310851336266290644502090473753542656
Process finished with exit code 0
```

Задание 2:

Функция сортировки чисел в списке по убыванию произведения цифр чисел . Применить к 10 спискам, где случайным образом генерируются трехзначные цифры. Вывести в виде : исходный список, отсортированный список.

Код программы:



The screenshot shows the PyCharm IDE with a Python file named `main.py`. The code defines a function `func(a)` that calculates the product of the digits of a number `a`. It then generates 10 lists of 10 random three-digit numbers each. Finally, it prints each list and its sorted version (sorted by the product of digits in descending order).

```
1 from random import *
2
3 def func(a):
4     n = a % 10
5     while a > 10:
6         a /= 10
7         n *= a%10
8     return n
9
10 a = [0 for i in range(10)]
11 i = 0
12 for i in range(10):
13     a[i] = [randint(100,999) for i in range(10)]
14
15 for i in range(10):
16     print(a[i], '\n', sorted(a[i], key=func, reverse=True), '\n')
```

## Результат работы программы:

```
[461, 497, 680, 726, 943, 150, 270, 132, 477, 471]
[497, 477, 943, 726, 471, 461, 132, 680, 150, 270]

[902, 168, 143, 775, 279, 512, 276, 584, 764, 169]
[775, 279, 584, 764, 276, 169, 168, 143, 512, 902]

[818, 633, 292, 639, 494, 526, 505, 869, 451, 809]
[869, 639, 494, 818, 526, 809, 633, 292, 451, 505]

[485, 361, 636, 850, 978, 156, 802, 545, 749, 129]
[978, 749, 485, 636, 545, 156, 129, 361, 802, 850]

[558, 923, 762, 530, 271, 872, 263, 190, 931, 412]
[558, 872, 762, 923, 263, 931, 271, 412, 530, 190]

[174, 781, 321, 885, 229, 263, 369, 295, 951, 641]
[885, 369, 295, 781, 229, 174, 263, 951, 641, 321]

[366, 320, 283, 689, 909, 501, 987, 640, 627, 347]
[987, 689, 366, 627, 347, 909, 283, 501, 320, 640]

[495, 764, 162, 130, 391, 543, 123, 191, 716, 376]
[495, 764, 376, 543, 716, 391, 162, 191, 123, 130]

[731, 631, 771, 659, 442, 277, 648, 292, 799, 826]
[799, 659, 648, 277, 826, 771, 292, 442, 731, 631]

[275, 530, 272, 648, 305, 964, 513, 172, 726, 210]
[648, 964, 726, 275, 272, 172, 513, 305, 530, 210]
```

Process finished with exit code 0