

Отчет по лабораторной работе №3  
по курсу «Разработка интернет-приложений»  
«Python-классы»

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## 1) Задание лабораторной работы.

Вход:

username или vk\_id пользователя

Выход:

Гистограмма распределения возрастов друзей пользователя

**Пример:**

Вход:

w8\_us

Выход:

16 ##

17 #

18 #

19 #####

20 #####

21 #####

22 #####

24 ##

26 ####

27 #

28 ##

30 #

42 #

48 #

## 2) Код программы

Файл base\_client.py:

```
class BaseClient:
    # URL vk api
    BASE_URL = None
    # metod vk api
    method = None
    # GET, POST, ...
    http_method = None

    # poluchenie GET parametrov zaprosa
    def get_params(self):
        return None

    # poluchenie dannih POST zaprosa
    def get_json(self):
        return None

    # poluchenie HTTP zagolovkov
    def get_headers(self):
        return None

    # skleyka url
    def generate_url(self, method):
        return '{0}{1}'.format(self.BASE_URL, method)

    # otpravka zaprosa k VK API
    def _get_data(self, method, http_method):
        response = None

        #todo vipolnit zapros

        return self.response_handler(response)

    # obrabotka otveta ot VK API
    def response_handler(self, response):
        return response

    # zapusk klienta
    def execute(self):
        return self._get_data(
            self.method,
            http_method=self.http_method
        )
```

Файл Friends.py:

```
from base_client import BaseClient
import requests
import json
from datetime import datetime

class Friends(BaseClient):
    BASE_URL = 'https://api.vk.com/method/friends.get'
    http_method = 'GET'

    def __init__(self, uid):
        self.uid = uid

    def get_params(self):
```

```

        return 'user_id=' + str(self.uid) + '&fields=bdate'

    def response_handler(self, response):
        try:
            obje = json.loads(response.text)
            friends = obje.get('response')

            ages = []

            for friend in friends:
                b_date = friend.get('bdate')

                if b_date is None or b_date.count('.') < 2:
                    continue

                b_date = datetime.strptime(b_date, "%d.%m.%Y")
                n_date = datetime.now()

                ages.append(int((n_date - b_date).days) // 365)

            uniqages = list(set(ages))
            return sorted([(x, ages.count(x)) for x in uniqages], key=lambda
x: x[0])
        except:
            raise Exception("Couldn't handle response for friends of user id
{}".format(self.uid))

    def _get_data(self, method, http_method):
        response = requests.get(self.BASE_URL + '?' + self.get_params())
        return self.response_handler(response)

```

### Файл UserId.py:

```

from base_client import BaseClient
import requests
import json

class IdFromUsername(BaseClient):
    BASE_URL = 'https://api.vk.com/method/users.get'
    http_method = 'GET'

    def __init__(self, name):
        self.name = name

    def get_params(self):
        return 'user_ids=' + self.name

    def response_handler(self, response):
        try:
            obje = json.loads(response.text)
            return obje.get('response')[0].get('uid')
        except:
            raise Exception("Couldn't handle response for username
{}".format(self.name))

    def _get_data(self, method, http_method):
        response = None

        response = requests.get(self.BASE_URL + '?' + self.get_params())
        return self.response_handler(response)

```

Файл Lab3.py:

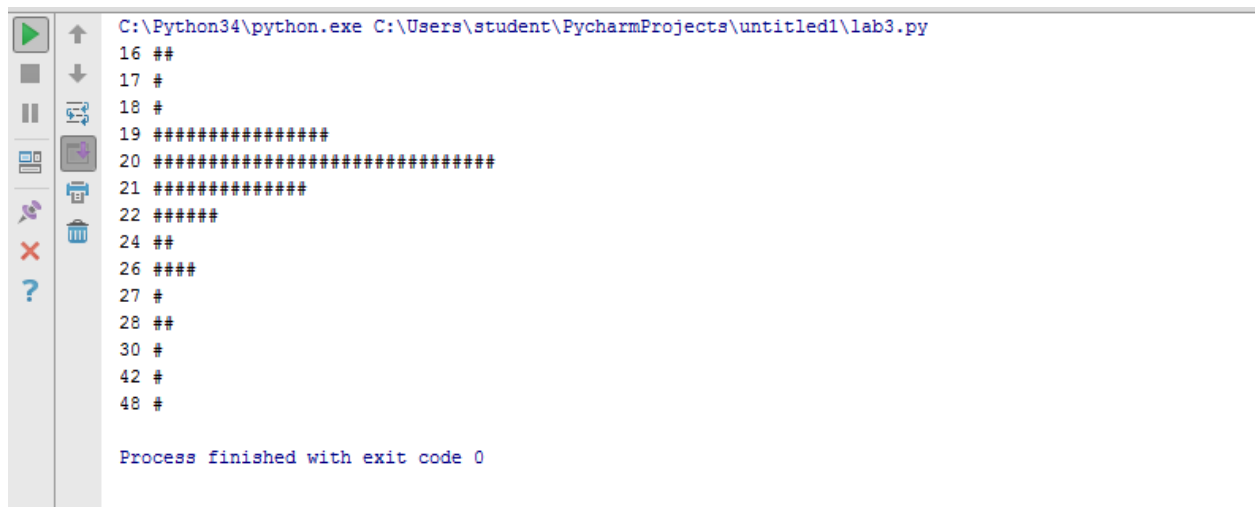
```
from UserId import IdFromUsername
from Friends import Friends
from datetime import datetime

user = IdFromUsername('w8_us')
user_id = user.execute()

friends_client = Friends(user_id)
friends = friends_client.execute()

for (age, count) in friends:
    print('{} {}'.format(int(age), '#' * count))
```

### 3) Результат работы программы.



```
C:\Python34\python.exe C:\Users\student\PycharmProjects\untitled1\lab3.py
16 ##
17 #
18 #
19 #####
20 #####
21 #####
22 #####
24 ##
26 ###
27 #
28 ##
30 #
42 #
48 #

Process finished with exit code 0
```