第四周学习笔记

1. Fork 第 04 周打卡 仓库至自己名下，然后将名下的这个仓库 Clone 到本地计算机

```
(base) Administrator@MICROSO-J56DDR4 MINGW64 ~/repo (main)
$ git clone git@gitcode.com:mjw135246/week04.git
Cloning into 'week04'...
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 5 (delta 0), reused 5 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (5/5), 8.45 KiB | 1.69 MiB/s, done.
```

2. 用 VS Code 打开项目目录，新建一个 environment.yml 文件，指定安装 Python 3.12，

environment.yml

```yaml
name: week04
channels:
  - conda-forge
dependencies:
  - python=3.12
```

然后运行 conda env create 命令创建 Conda 环境

```
$ conda env create
C:\Users\Administrator\anaconda3
ad.
```

3. 新建一个 contacts.txt 文件，每行写一个联系人

contacts.txt

```
白展堂 男 baizhantang@163.com
佟湘玉 女 tongxiangyu@163.com
吕轻侯 男 lvqinghou@126.com
郭芙蓉 女 guofurong@126.com
李秀莲 男 lixiulian@163.com
祝无双 女 zhuwushuang@163.com
```

4. 借助 AI 将代码复制到 main.py

main.py > ...

```python
def read_contacts(file_path):
    try:
        with open(file_path, 'r', encoding='utf-8') as file:
            lines = file.readlines()
            contacts = []
            for line in lines:
                name, gender, email = line.strip().split(',')
                contacts.append((name, gender, email))
            return contacts
    except FileNotFoundError:
        print(f"错误：未找到文件 {file_path}")
        return []
    except Exception as e:
        print(f"错误：读取文件时发生未知错误 {e}")
        return []

def generate_emails(contacts):
    emails = []
    for name, gender, email in contacts:
        title = "女士" if gender == "女" else "先生"
        email_content = f"to: <{email}>\n尊敬的{name}{title}，
        emails.append(email_content)
    return emails


def sort_contacts(contacts):
    return sorted(contacts, key=lambda x: (x[2].split('@')[1],
```

运行 python main.py

```
(week04) Administrator@MICROSO-J56DDR4 MINGW64 ~/repo/we
$  python main.py
邮件已成功生成并保存到 emails.txt 文件中
(week04) Administrator@MICROSO-J56DDR4 MINGW64 ~/repo/we
$ ls -l
total 32
-rw-r--r-- 1 Administrator 197121 18805 Mar 27 20:29 LIC
-rw-r--r-- 1 Administrator 197121  2239 Mar 27 20:29 REA
-rw-r--r-- 1 Administrator 197121   202 Mar 28 16:37 con
-rw-r--r-- 1 Administrator 197121   666 Mar 28 16:38 ema
-rw-r--r-- 1 Administrator 197121    74 Mar 27 20:44 env
-rw-r--r-- 1 Administrator 197121  1816 Mar 28 16:31 mai
-rw-r--r-- 1 Administrator 197121   156 Mar 28 16:19 pyp
(week04) Administrator@MICROSO-J56DDR4 MINGW64 ~/repo/we
$ cat emails.txt
to: <guofurong@126.com>
尊敬的郭芙蓉女士，您的会员资格即将到期，请及时续费。
---
to: <lvqinghou@126.com>
尊敬的吕轻侯先生，您的会员资格即将到期，请及时续费。
---
to: <baizhantang@163.com>
尊敬的白展堂先生，您的会员资格即将到期，请及时续费。
---
to: <lixiulian@163.com>
尊敬的李秀莲先生，您的会员资格即将到期，请及时续费。
---
to: <tongxiangyu@163.com>
尊敬的佟湘玉女士，您的会员资格即将到期，请及时续费。
---
to: <zhuwushuang@163.com>
尊敬的祝无双女士，您的会员资格即将到期，请及时续费。
---
```

5.运行 python -m pdb main.py 命令

```
(week04) Administrator@MICROSO-J56DDR4 MINGW64 ~/repo/week04 (main)
$ python -m pdb main.py
> c:\users\administrator\repo\week04\main.py(1)<module>()
-> def read_contacts(file_path):
```

在（pdb）提示符下练习使用 l（显示代码）、n（执行当前行）、p（打印表达式）、s（步入调用）、pp（美观打印）、c（继续执行）等命令

```
(Pdb) l
  1  -> def read_contacts(file_path):
  2         try:
  3             with open(file_path, 'r', encoding='utf-8') as file:
  4                 lines = file.readlines()
  5                 contacts = []
  6                 for line in lines:
  7                     line = line.strip()
  8                     if line:  # 过滤掉空行
  9                         try:
 10                             name, gender, email = line.split(',')
 11                             contacts.append((name, gender, email))
```

```
(Pdb) n
> c:\users\administrator\repo\week04\main.py(23)<module>()
-> def generate_emails(contacts):
```

```
(Pdb) s
> c:\users\administrator\repo\week04\main.py(45)<module>()
-> if __name__ == "__main__":
```

```
(Pdb) p contacts
[('白展堂', '男', 'baizhantang@163.com'), ('佟湘玉', '女', 'tongxiangyu@163.com'), ('吕轻侯', '男', 'lvqinghou@126.com'), ('郭芙蓉', '女', 'guofurong@126.com'), ('李秀莲', '男', 'lixiulian@163.com'), ('祝无双', '女', 'zhuwushuang@163.com')]
```

```
(Pdb) pp contacts
[('白展堂', '男', 'baizhantang@163.com'),
 ('佟湘玉', '女', 'tongxiangyu@163.com'),
 ('吕轻侯', '男', 'lvqinghou@126.com'),
 ('郭芙蓉', '女', 'guofurong@126.com'),
 ('李秀莲', '男', 'lixiulian@163.com'),
 ('祝无双', '女', 'zhuwushuang@163.com')]
```

```
(Pdb) c
邮件已成功生成并保存到 emails.txt 文件中
The program finished and will be restarted
> c:\users\administrator\repo\week04\main.py(1)<module>()
-> def read_contacts(file_path):
```

安装 wat-inspector

```
! environment.yml
1   name: week04
2   channels:
3     - conda-forge
4   dependencies:
5     - python=3.12
6     - wat-inspector
```

6.1 保留字

```
(week04) Administrator@MICROSO-
$ python
Python 3.12.9 | packaged by conc
Type "help", "copyright", "credi
>>> import keyword
>>> print(keyword.kwlist)
['False', 'None', 'True', 'and',
 'if', 'import', 'in', 'is', 'la
```

6.2 语句和表达式

```
>>> x = 10
>>> y = 20
```

```
>>> result = 3 * 4 + 2
>>> print(result)
14
```

6.3 缩进

```
x = 10
if x > 5:
    # 这个代码块属于 if 语句
    print("x 大于 5")
    print("这行代码也在 if 代码块内")
else:
    # 这个代码块属于 else 语句
    print("x 小于等于 5")
```

6.4 局部变量、全局变量、LEGB

```
def test_function():
    # 定义局部变量
    local_variable = 10
    print(local_variable)

test_function()
```

```
def modify_global():
    global global_variable
    global_variable = 30
    print(global_variable)

print(global_variable)  # 输出 20

modify_global()  # 输出 30

print(global_variable)
```