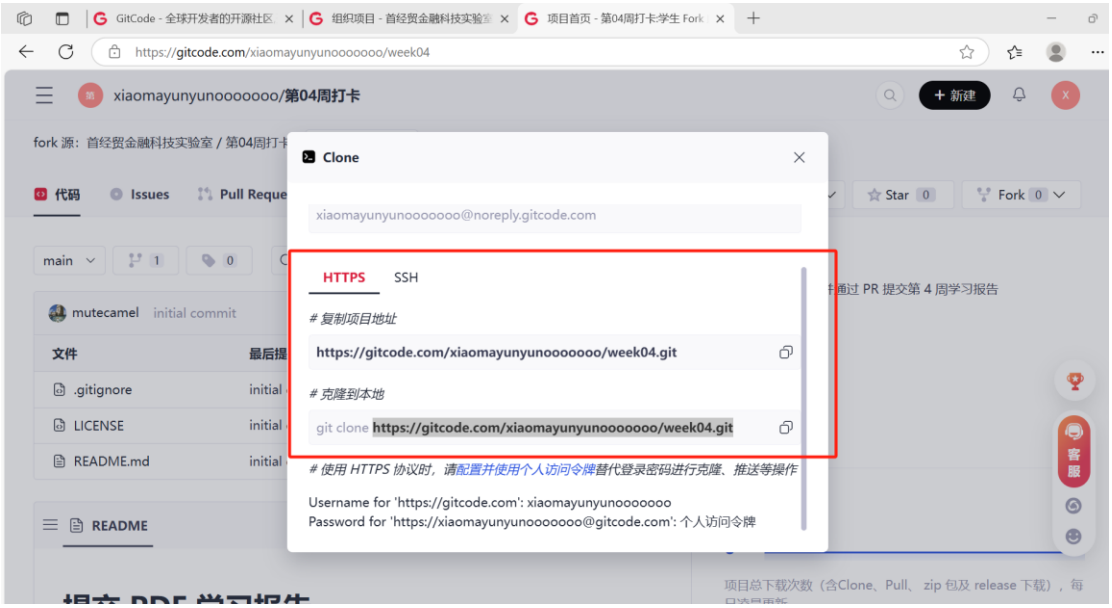
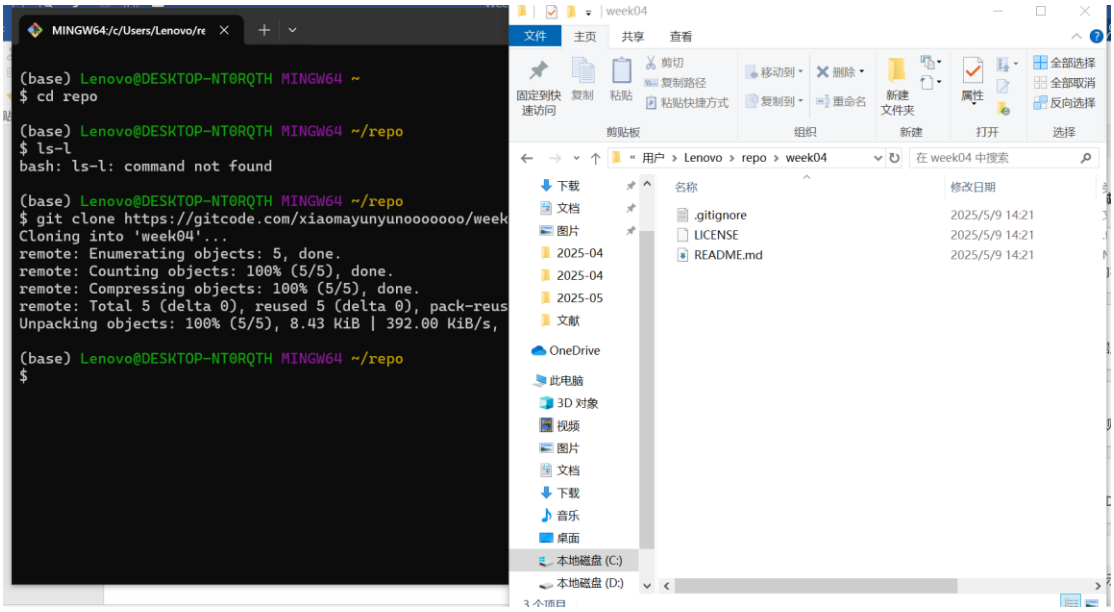
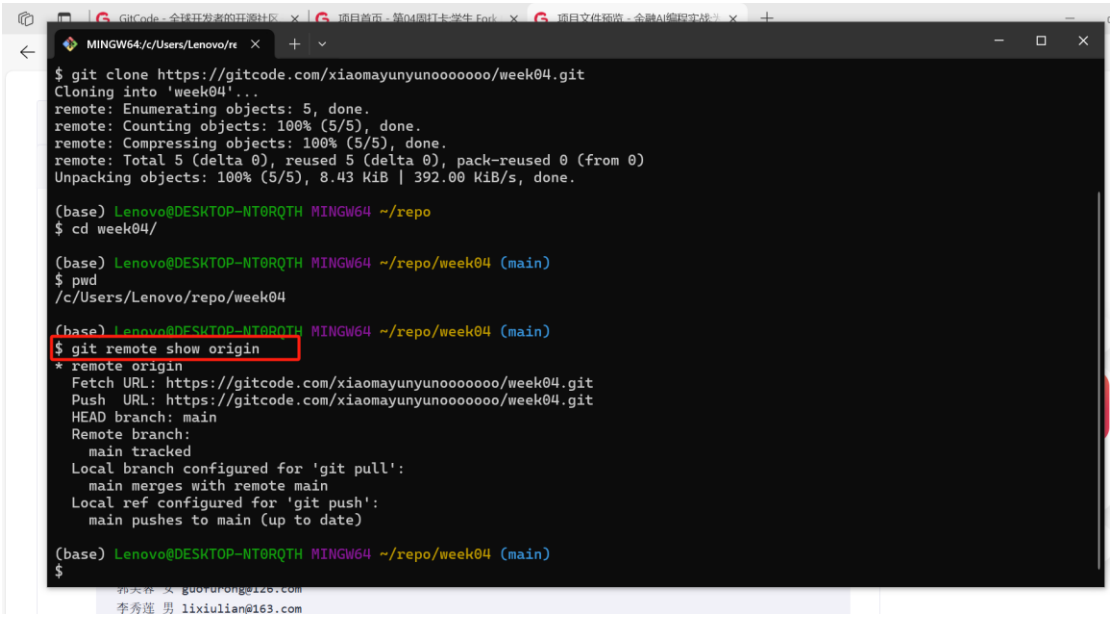
Week04 学习笔记

Fork 第 04 周打卡 仓库至你的名下，然后将你名下的这个仓库 Clone 到你的本地计算机：



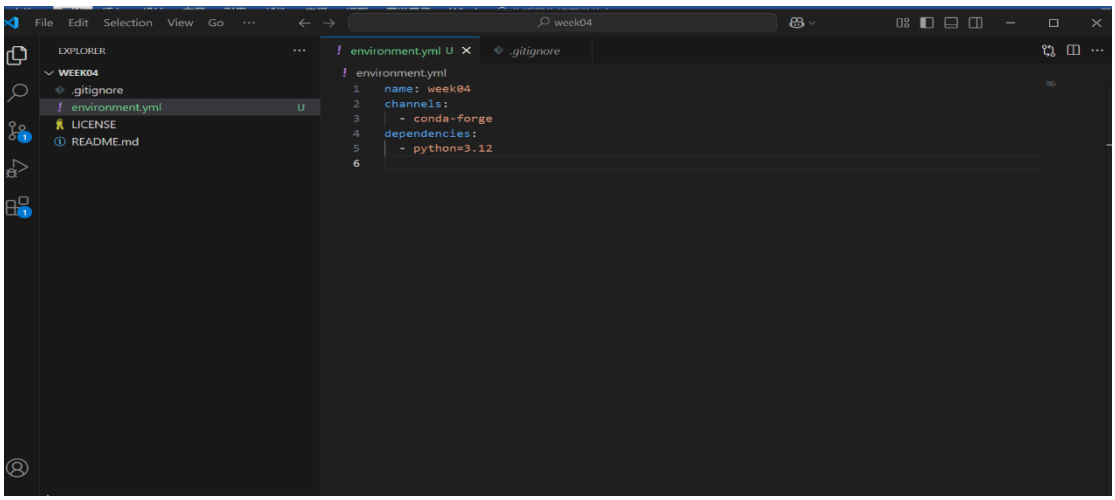


查看远程仓库地址：



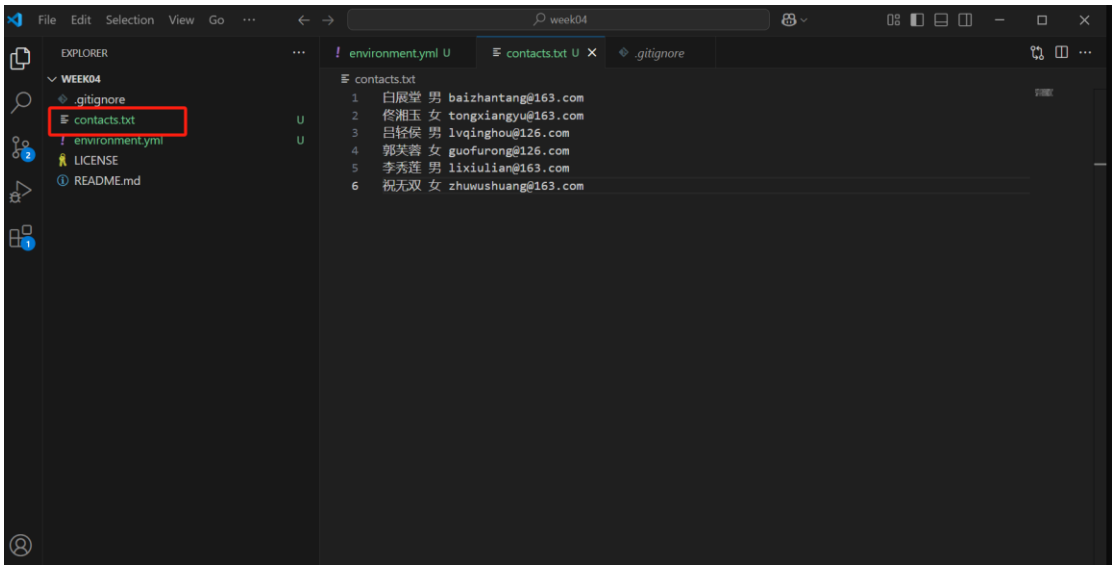
用 VS Code 打开项目目录，新建一个 environment.yml 文件，指定安装 Python 3.12，

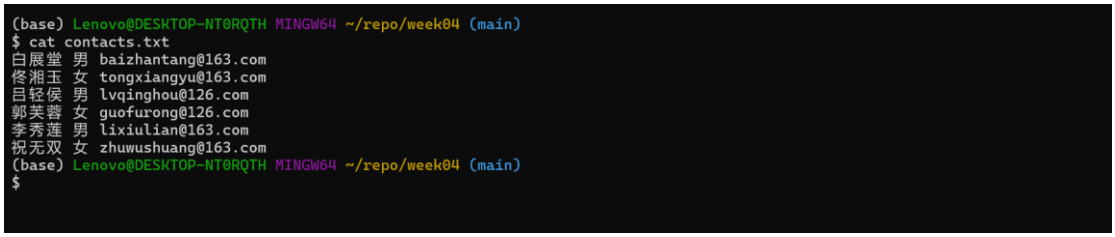
然后运行 conda env create 命令创建 Conda 环境：



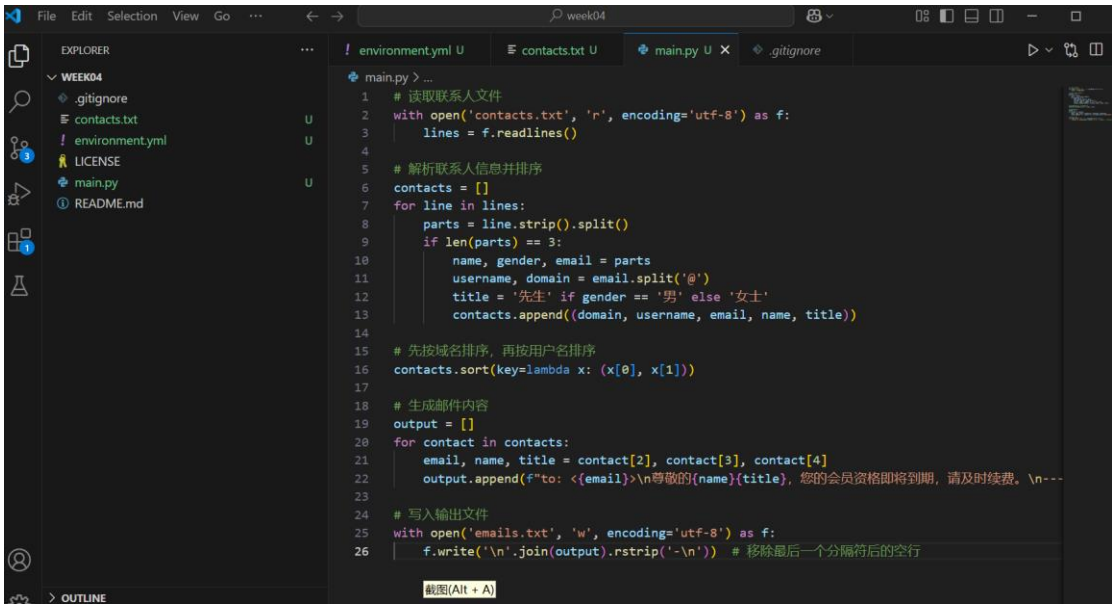

```
(base) Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ cat environment.yml
name: prj1
channels:
  - conda-forge
  - https://repo.anaconda.com/pkgs/main
  - https://repo.anaconda.com/pkgs/r
  - https://repo.anaconda.com/pkgs/msys2
dependencies:
  - brotli-python=1.1.0=py312h275cf98_2
  - bzip2=1.0.8=h2466b09_7
  - ca-certificates=2025.1.31=h56e8100_0
  - certifi=2025.1.31=pyhd8ed1ab_0
  - cffi=1.17.1=py312h4389bb4_0
  - charset-normalizer=3.4.1=pyhd8ed1ab_0
  - h2=4.2.0=pyhd8ed1ab_0
  - hpack=4.1.0=pyhd8ed1ab_0
  - hyperframe=6.1.0=pyhd8ed1ab_0
  - idna=3.10=pyhd8ed1ab_1
  - intel-openmp=2024.2.1=h57928b3_1083
  - libblas=3.9.0=31_h641d27c_mkl
  - libcblas=3.9.0=31_h5e41251_mkl
  - libexpat=2.7.0=he0c23c2_0
  - libffi=3.4.6=h537db12_1
  - libhwloc=2.11.2=default_ha69328c_1001
  - libiconv=1.18=h135ad9c_1
  - liblapack=3.9.0=31_h1aa476e_mkl
  - liblzma=5.6.4=h2466b09_0
  - libsqlite=3.49.1=h67fdade_2
```

新建一个 contacts.txt 文件，每行写一个联系人，每个联系人都包含姓名、性别、邮箱三个字段，用空格分隔，例如：





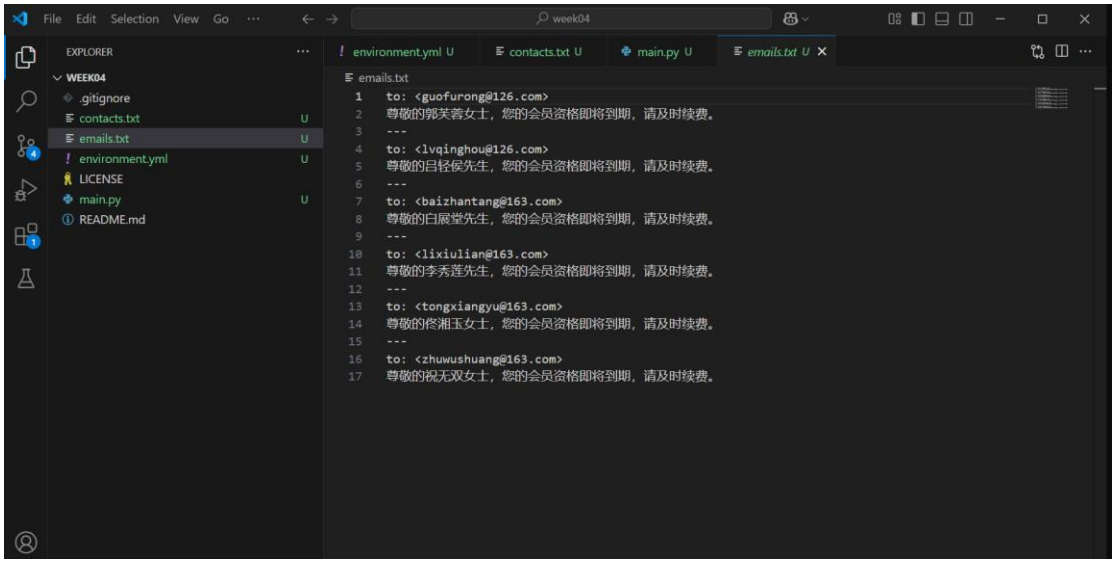
将以上“任务要求”的文本，复制粘贴到大模型（比如豆包、DeepSeek）里，请 AI 来帮助编写程序初稿：



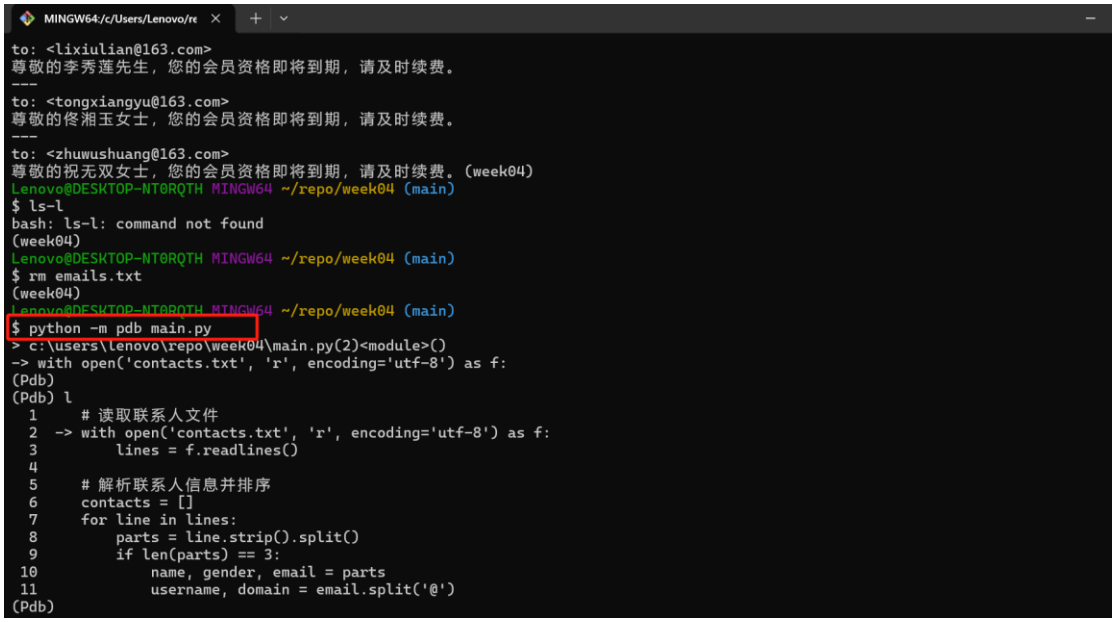
```
(base) Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ conda activate week04
(week04)
Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ ls-l
bash: ls-l: command not found
(week04)
Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ cat contacts.txt
白展堂 男 baizhantang@163.com
佟湘玉 女 tongxiangyu@163.com
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
(week04)
Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ cat main.py
# 读取联系人文件
with open('contacts.txt', 'r', encoding='utf-8') as f:
    lines = f.readlines()

# 解析联系人信息并排序
contacts = []
for line in lines:
    parts = line.strip().split()
    if len(parts) == 3:
        name, gender, email = parts
        username, domain = email.split('@')
        title = '先生' if gender == '男' else '女士'
        contacts.append((domain, username, email, name, title))
```

运行 python main.py 命令（作用是启动 Python 解释器，执行 main.py 里的代码直至结束(EOF) 或报错 (Exception))，检查运行结果是否符合预期：

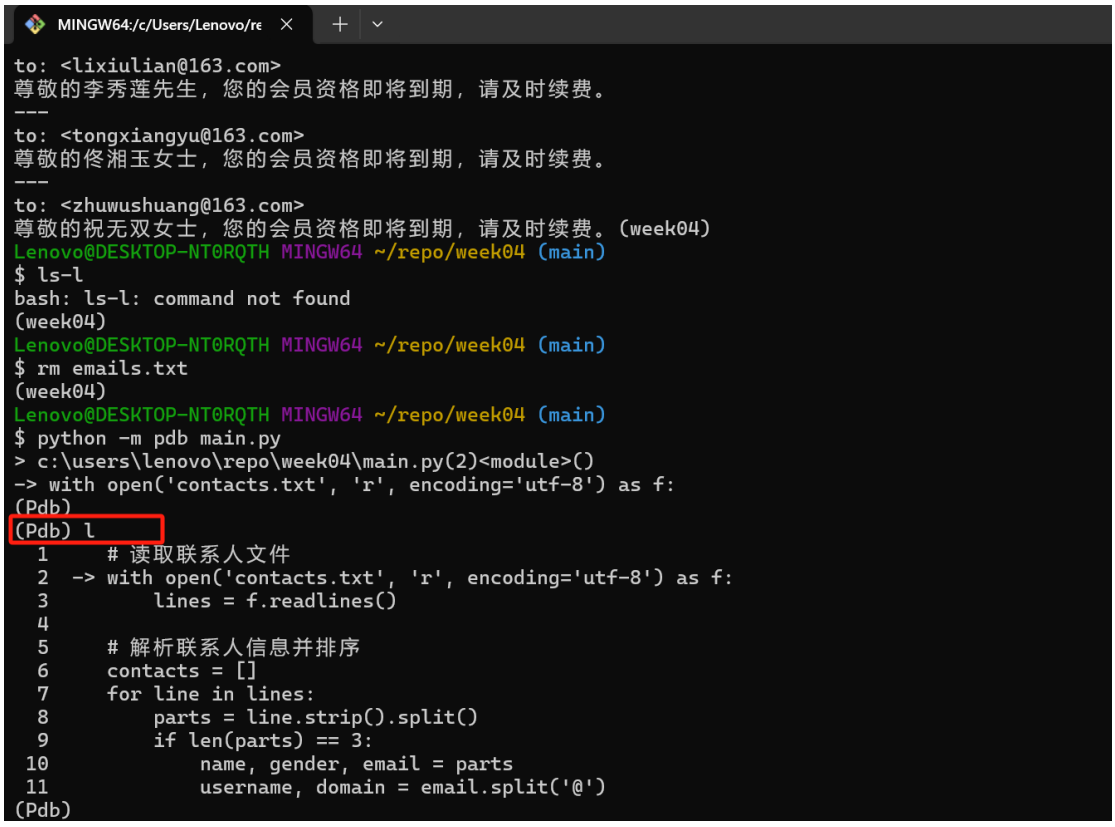
```
MINGW64:/c/Users/Lenovo/re
with open('contacts.txt', 'r', encoding='utf-8') as f:
    lines = f.readlines()

# 解析联系人信息并排序
contacts = []
for line in lines:
    parts = line.strip().split()
    if len(parts) == 3:
        name, gender, email = parts
        username, domain = email.split('@')
        title = '先生' if gender == '男' else '女士'
        contacts.append((domain, username, email, name, title))

# 先按域名排序，再按用户名排序
contacts.sort(key=lambda x: (x[0], x[1]))

# 生成邮件内容
output = []
for contact in contacts:
    email, name, title = contact[2], contact[3], contact[4]
    output.append(f"to: <{email}>\n尊敬的{name}{title}，您的会员资格即将到期，请及时续费。\n---")

# 写入输出文件
with open('emails.txt', 'w', encoding='utf-8') as f:
    f.write('\n'.join(output).rstrip('-\n'))  # 移除最后一个分隔符后的空行(week04)
Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ python main.py
(week04)
Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ python main.py
(week04)
Lenovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$
```

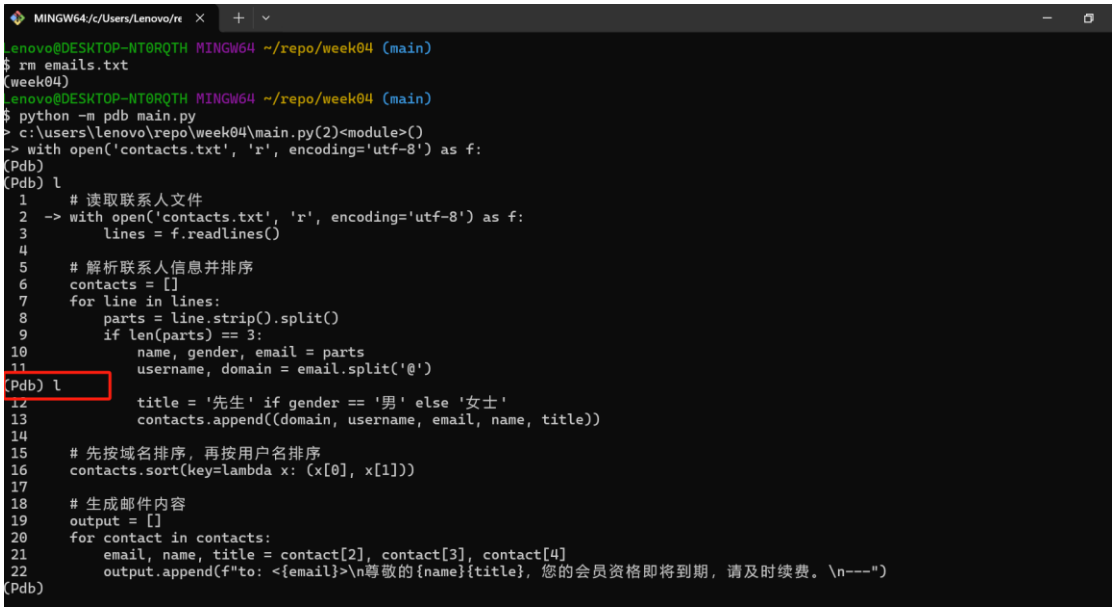


运行 python -m pdb main.py 命令 (作用是以调试模式 (debug mode) 启动 Python 解释器，准备执行 main.py 里的代码):

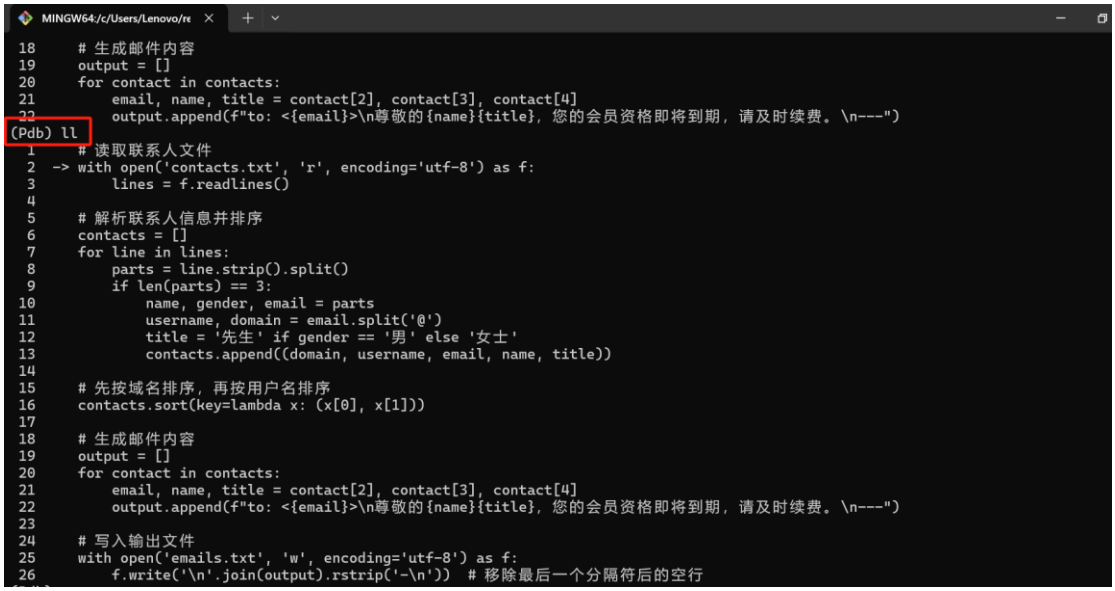


在 (pdb) 提示符下练习使用 l (显示代码)、n (执行当前行)、p (打印表达式)、s (步入调用)、pp (美观打印)、c (继续执行) 等命令 (参考文档):





```
MINGW64:/c/Users/Lenovo/re
enovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ rm emails.txt
(week04)
enovo@DESKTOP-NT0RQTH MINGW64 ~/repo/week04 (main)
$ python -m pdb main.py
> c:\users\lenovo\repo\week04\main.py(2)<module>()
-> with open('contacts.txt', 'r', encoding='utf-8') as f:
(Pdb)
(Pdb) l
  1     # 读取联系人文件
  2  -> with open('contacts.txt', 'r', encoding='utf-8') as f:
  3         lines = f.readlines()
  4
  5     # 解析联系人信息并排序
  6     contacts = []
  7     for line in lines:
  8         parts = line.strip().split()
  9         if len(parts) == 3:
 10             name, gender, email = parts
 11             username, domain = email.split('@')
(Pdb) l
 12             title = '先生' if gender == '男' else '女士'
 13             contacts.append((domain, username, email, name, title))
 14
 15     # 先按域名排序，再按用户名排序
 16     contacts.sort(key=lambda x: (x[0], x[1]))
 17
 18     # 生成邮件内容
 19     output = []
 20     for contact in contacts:
 21         email, name, title = contact[2], contact[3], contact[4]
 22         output.append(f"to: <{email}>\n尊敬的{name}{title}，您的会员资格即将到期，请及时续费。\n---")
(Pdb)
```



```
MINGW64:/c/Users/Lenovo/re
 18     # 生成邮件内容
 19     output = []
 20     for contact in contacts:
 21         email, name, title = contact[2], contact[3], contact[4]
 22         output.append(f"to: <{email}>\n尊敬的{name}{title}，您的会员资格即将到期，请及时续费。\n---")
(Pdb) ll
  1     # 读取联系人文件
  2  -> with open('contacts.txt', 'r', encoding='utf-8') as f:
  3         lines = f.readlines()
  4
  5     # 解析联系人信息并排序
  6     contacts = []
  7     for line in lines:
  8         parts = line.strip().split()
  9         if len(parts) == 3:
 10             name, gender, email = parts
 11             username, domain = email.split('@')
 12             title = '先生' if gender == '男' else '女士'
 13             contacts.append((domain, username, email, name, title))
 14
 15     # 先按域名排序，再按用户名排序
 16     contacts.sort(key=lambda x: (x[0], x[1]))
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 18     # 生成邮件内容
 19     output = []
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 22         output.append(f"to: <{email}>\n尊敬的{name}{title}，您的会员资格即将到期，请及时续费。\n---")
 23
 24     # 写入输出文件
 25     with open('emails.txt', 'w', encoding='utf-8') as f:
 26         f.write('\n'.join(output).rstrip('-\n'))  # 移除最后一个分隔符后的空行
```

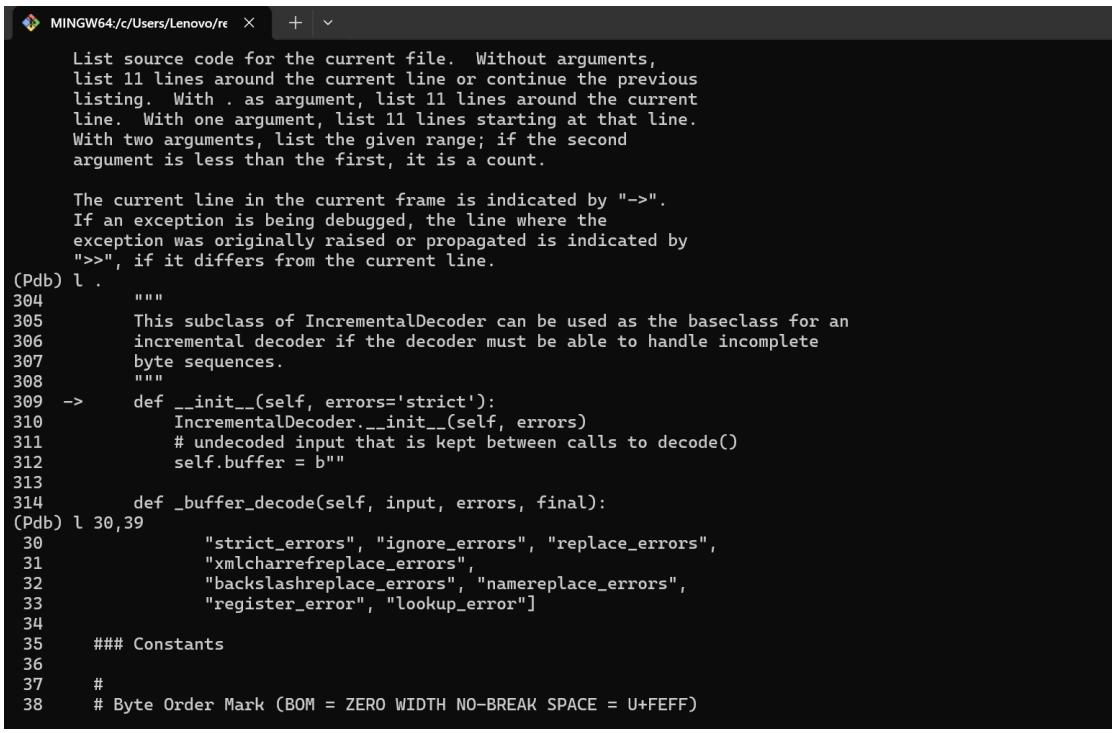

在调试过程中，利用 `wat-inspector` (第三方软件包，需要安装) 检查 (inspect) 各种对象：