Lab1_配置环境&初始Python

0-基本信息

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- 实验环境：MacOS Sonoma 14.3.1

1-实验目的

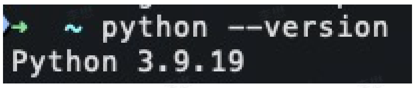
- 安装配置 Python 环境并体验 Python 第三方功能

2-实验内容

2.1 Python安装与虚拟环境

一、安装 Python

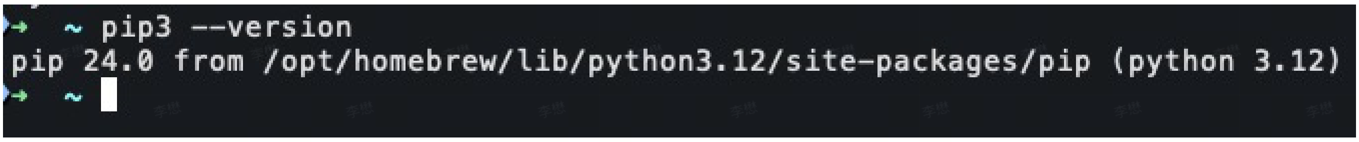
- 之前电脑里装过 Python 了
- MacOS 使用 Homebrew 辅助安装
  - 命令 `brew install python 3.x.x`
- 查看 Python 版本



```
➜  ~ python --version
Python 3.9.19
```

二、配置pip

- 一般在安装 Python 后，就已经内置
- 输入命令 `pip3 --version` ，查看版本，注意是 pip3



```
➜  ~ pip3 --version
pip 24.0 from /opt/homebrew/lib/python3.12/site-packages/pip (python 3.12)
➜  ~ 
```

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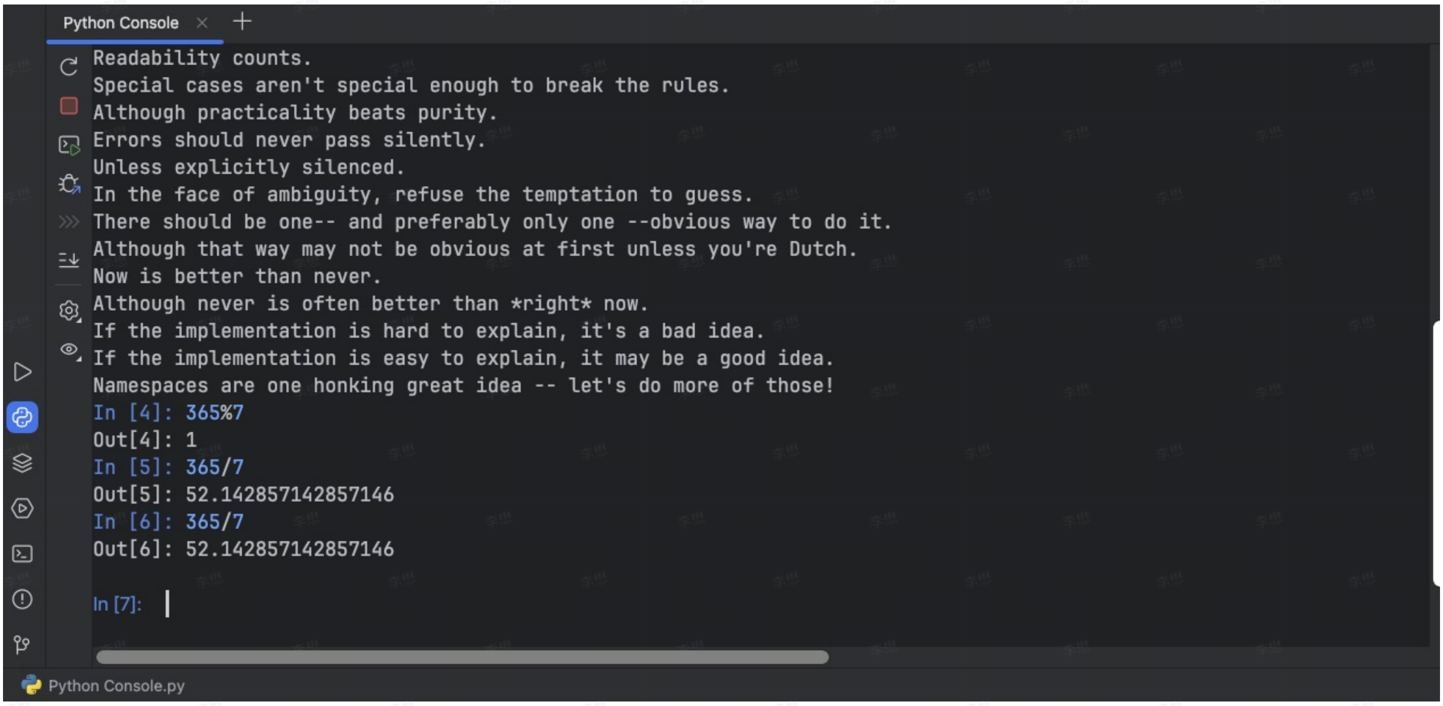
三、配置虚拟环境（VirtualEnv）

- 作用：隔绝不同功能的开发环境，避免污染
- 之前已配置好，这里不过多展示

2.2 IPython的认识和安装

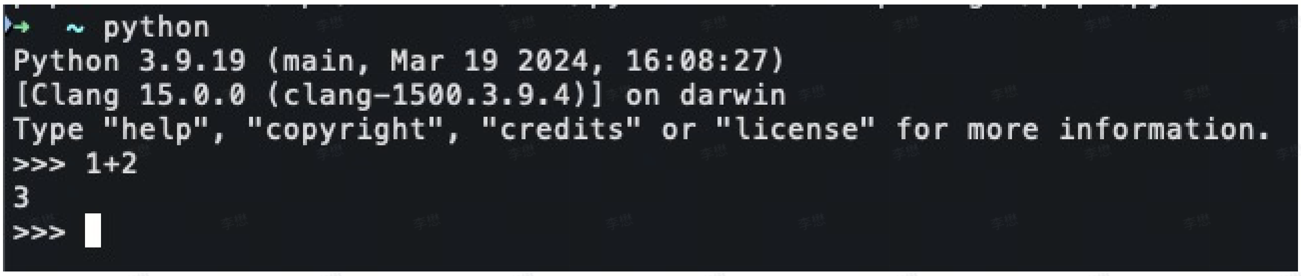
- PyCharm Console 自带 IPython



```
Readability counts.
Special cases aren't special enough to break the rules.
Although practicality beats purity.
Errors should never pass silently.
Unless explicitly silenced.
In the face of ambiguity, refuse the temptation to guess.
There should be one-- and preferably only one --obvious way to do it.
Although that way may not be obvious at first unless you're Dutch.
Now is better than never.
Although never is often better than *right* now.
If the implementation is hard to explain, it's a bad idea.
If the implementation is easy to explain, it may be a good idea.
Namespaces are one honking great idea -- let's do more of those!
In [4]: 365%7
Out[4]: 1
In [5]: 365/7
Out[5]: 52.142857142857146
In [6]: 365/7
Out[6]: 52.142857142857146

In [7]:
```

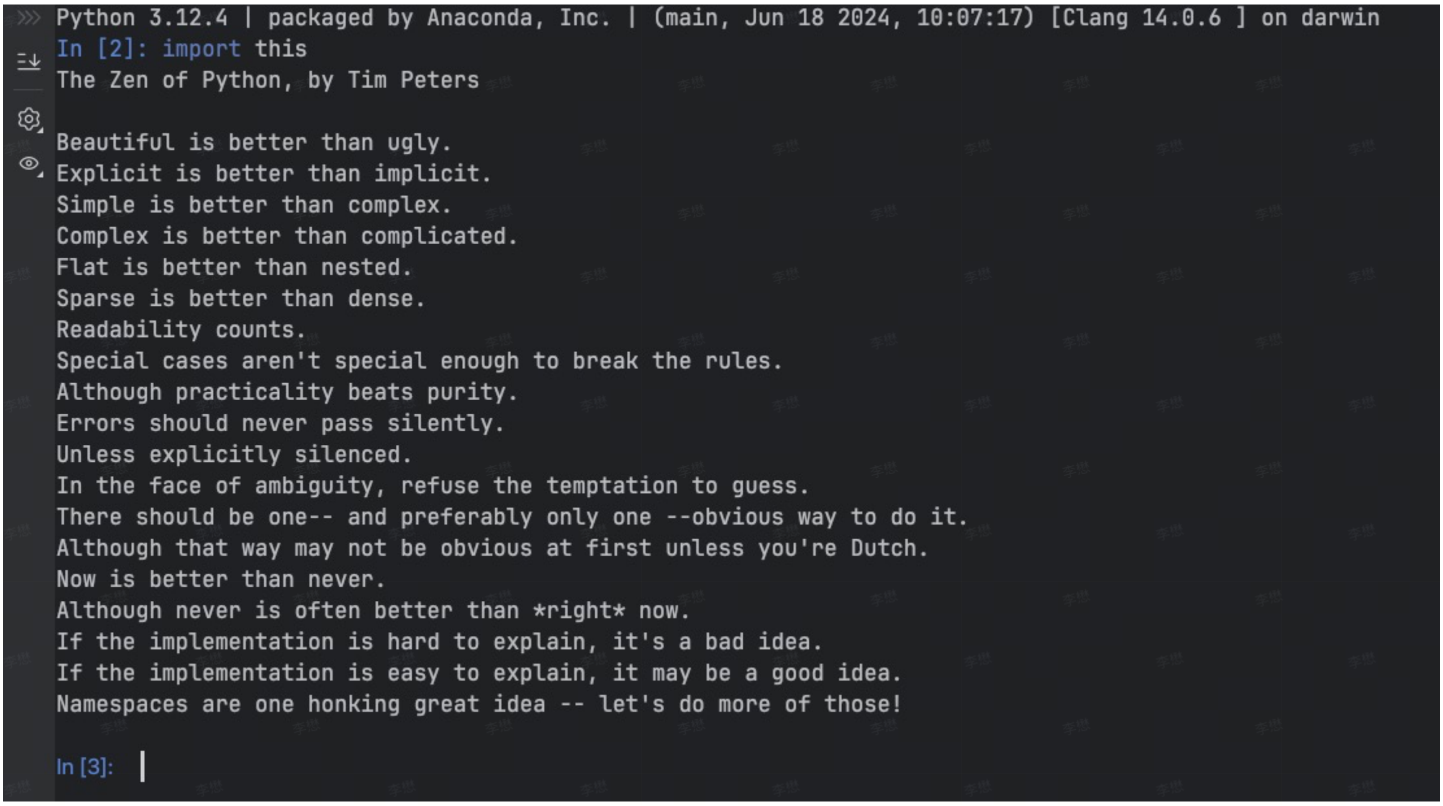
- Mac终端里输入python，可以调用出CPython



```
→  ~ python
Python 3.9.19 (main, Mar 19 2024, 16:08:27)
[Clang 15.0.0 (clang-1500.3.9.4)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> 1+2
3
>>>
```

2.3 The Zen of Python

- 在 Python Console 中输入 `import this` 即可查看



```
Python 3.12.4 | packaged by Anaconda, Inc. | (main, Jun 18 2024, 10:07:17) [Clang 14.0.6 ] on darwin
In [2]: import this
The Zen of Python, by Tim Peters

Beautiful is better than ugly.
Explicit is better than implicit.
Simple is better than complex.
Complex is better than complicated.
Flat is better than nested.
Sparse is better than dense.
Readability counts.
Special cases aren't special enough to break the rules.
Although practicality beats purity.
Errors should never pass silently.
Unless explicitly silenced.
In the face of ambiguity, refuse the temptation to guess.
There should be one-- and preferably only one --obvious way to do it.
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If the implementation is easy to explain, it may be a good idea.
Namespaces are one honking great idea -- let's do more of those!

In [3]:
```
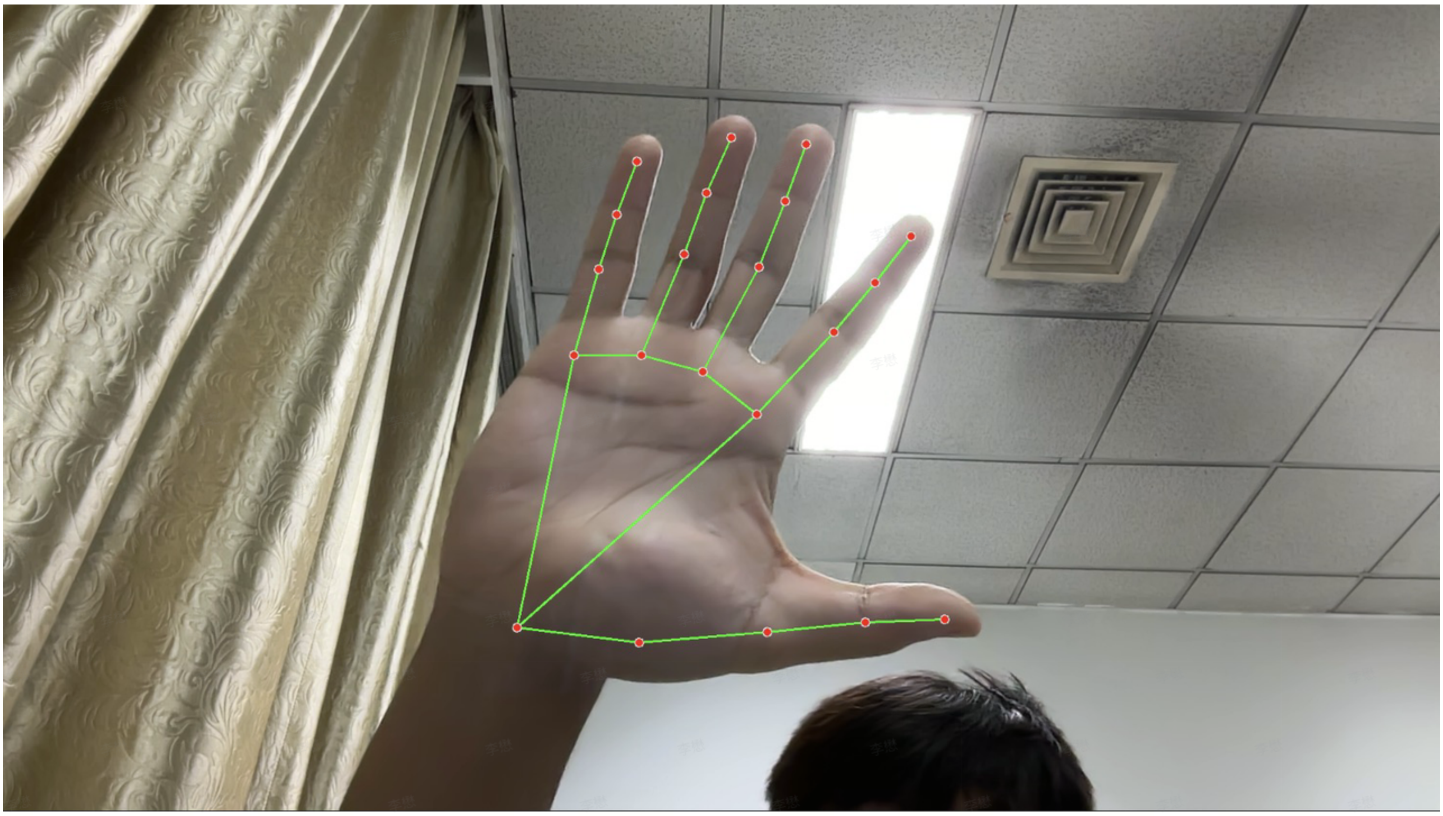
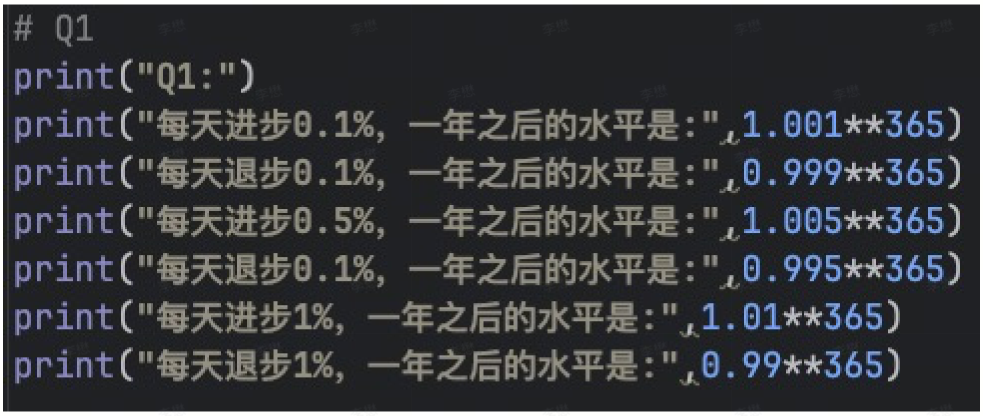

2.4 mediapipe

1. 介绍：MediaPipe是一款由Google开发并开源的数据流处理机器学习应用开发框架。支持 **面部检测、手势检测、人体骨骼检测、物体追踪**等。
2. 作业：画出手指骨骼
   a. 实验内容见



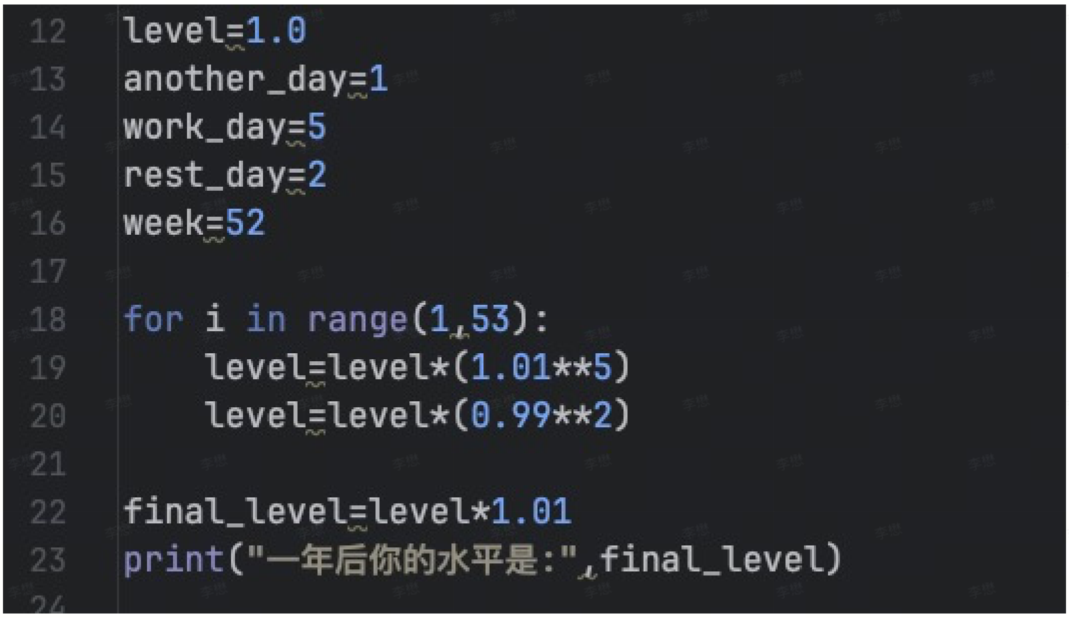
2.5 天天向上的力量

1. 简单的乘方运算



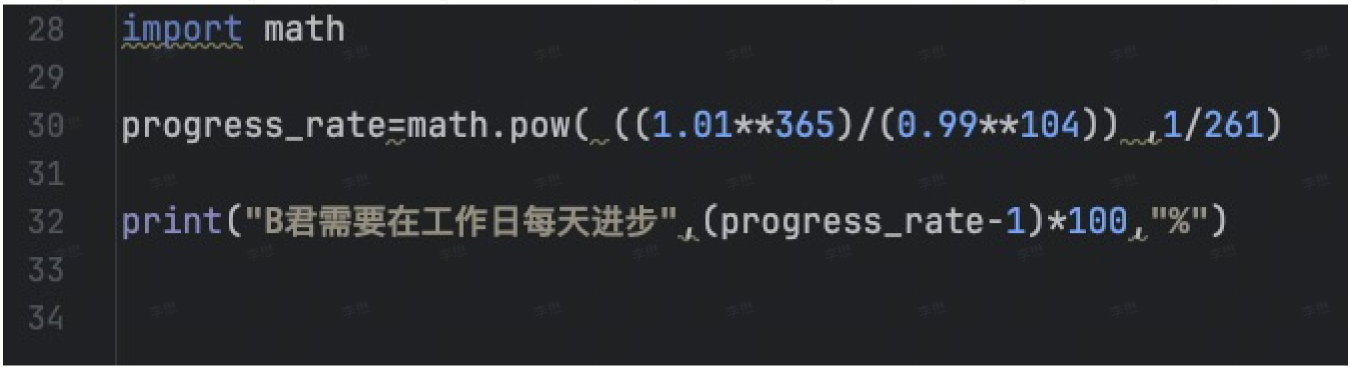
```
# Q1
print("Q1:")
print("每天进步0.1%，一年之后的水平是:",1.001**365)
print("每天退步0.1%，一年之后的水平是:",0.999**365)
print("每天进步0.5%，一年之后的水平是:",1.005**365)
print("每天退步0.1%，一年之后的水平是:",0.995**365)
print("每天进步1%，一年之后的水平是:",1.01**365)
print("每天退步1%，一年之后的水平是:",0.99**365)
```

2. 分成工作日和周末，循环计算



```
level=1.0
another_day=1
work_day=5
rest_day=2
week=52

for i in range(1,53):
    level=level*(1.01**5)
    level=level*(0.99**2)

final_level=level*1.01
print("一年后你的水平是:",final_level)
```

3. 列方程，求解未知数



```
import math

progress_rate=math.pow( ((1.01**365)/(0.99**104)) ,1/261)

print("B君需要在工作日每天进步",(progress_rate-1)*100,"%")


```

3-总结

- 配置环境之前做过，相对轻松
- 刚开始入门，之后剩余时间可以复现课件上的代码，做一个通讯录，加强理解

李懋