

# Python - 上机 2

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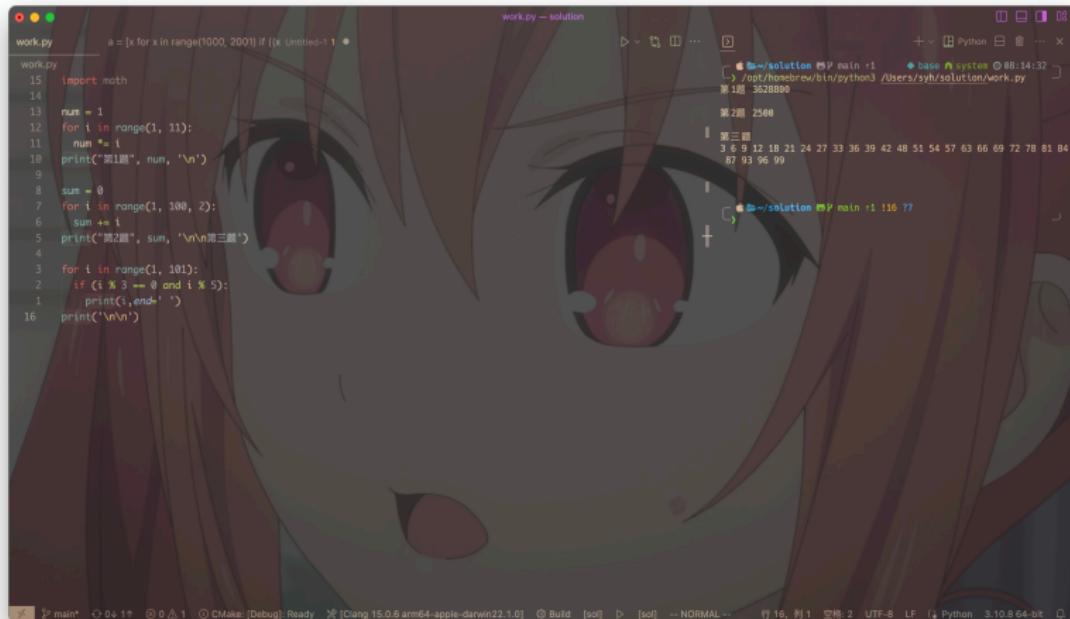
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# Contents

## 1. 实验五

## 1-3 题



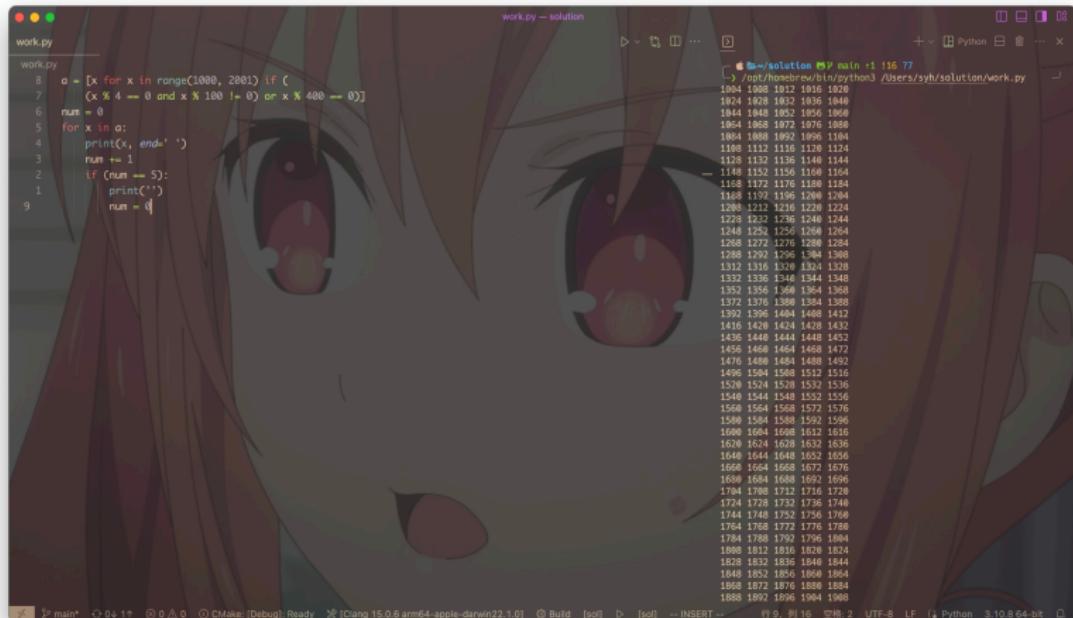
work.py

```
a = [x for x in range(1000, 2001) if (x % 11 == 0)]  
print('第1题', a, '\n')  
  
import math  
num = 1  
for i in range(1, 11):  
    num *= i  
print('第2题', num, '\n\n第三题')  
  
sum = 0  
for i in range(1, 101):  
    if (i % 3 == 0 and i % 5):  
        print(i, end=' ')  
    sum += i  
print('\n\n')
```

work.py — solution

base system 88:14:32  
第1题 3628800  
第2题 3628800  
第3题  
3 6 9 12 18 21 24 27 33 36 39 42 48 51 54 57 63 66 69 72 78 81 84  
87 93 96 99

## 4 题

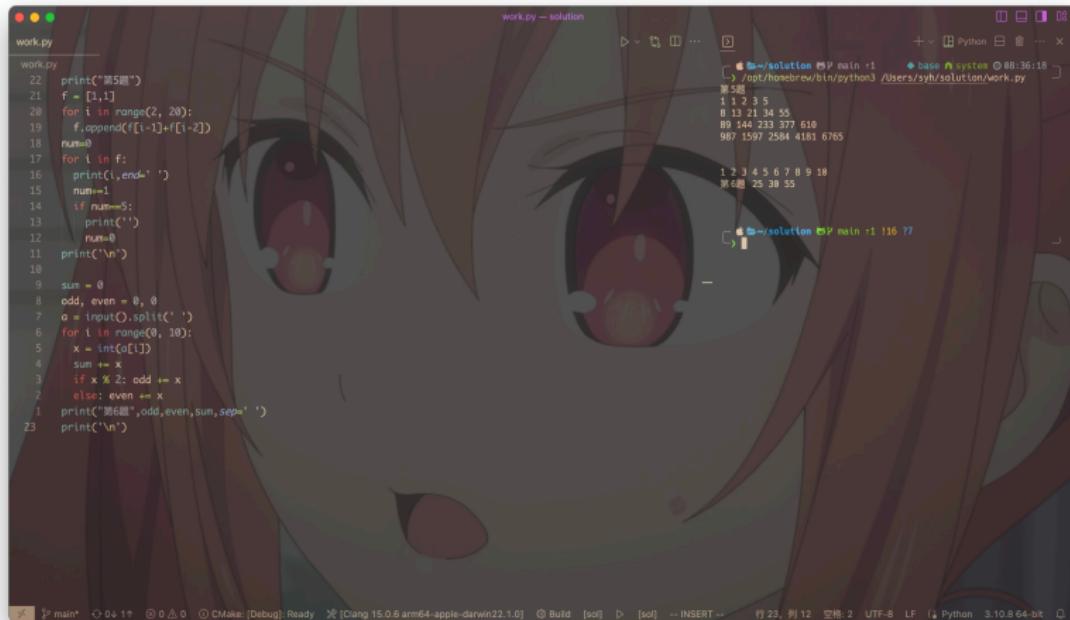


work.py — solution

```
work.py
1 a = [x for x in range(1000, 2001) if (
2     (x % 4 == 0 and x % 100 != 0) or x % 400 == 0)]
3 num = 0
4 for x in a:
5     print(x, end=' ')
6     num += 1
7     if (num == 5):
8         print()
9         num = 0
```

main\* 0 0 1 0 0 CMake: [Debug] Ready Clang 15.0.6 arm64-apple-darwin22.1.0 Build [sol] [sol] -- INSERT -- 行 9, 列 16 宽度: 2 UTF-8 LF Python 3.10.6 64-bit

## 5-6 题



work.py — solution

```
work.py
22 print("题5题")
23 f = []
24 for i in range(2, 10):
25     f.append(f[i-1]+f[i-2])
26 num=0
27 for i in f:
28     print(i,end=' ')
29     num+=1
30     if num==5:
31         print()
32         num=0
33 print('\n')
34 sum = 0
35 odd, even = 0, 0
36 a = input().split(' ')
37 for i in range(0, 10):
38     x = int(a[i])
39     sum += x
40     if x % 2: odd += x
41     else: even += x
42 print("题6题",odd,even,sum,sep=" ")
43 print('\n')
```

base → system ⑧ 88:36:18  
/Users/syh/solution/work.py

第5题  
1 1 2 3 5  
8 13 21 34 55  
89 144 233 377 610  
987 1597 2584 4181 6765

1 2 3 4 5 6 7 8 9 10  
第6题 25 38 55

base → system ⑧ 11:16:17

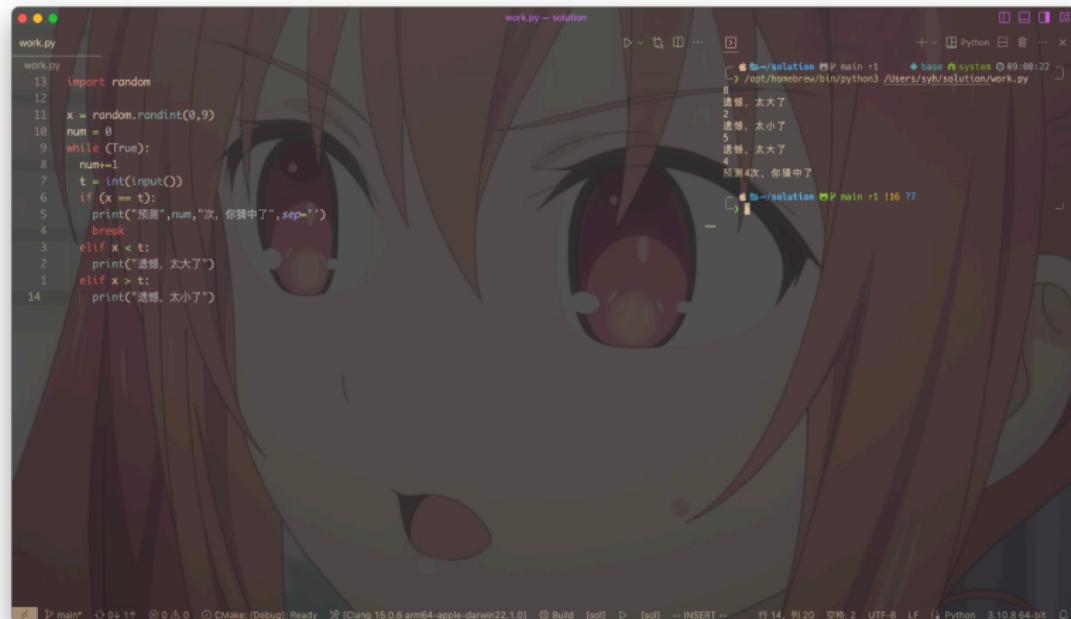
行 23, 列 12 空格: 2 UTF-8 LF ↵ Python 3.10.8 64-bit

7-9 题



```
work.py - solution
work.py
23 while (True):
22     x = input()
21     if (x == 'A'):
20         break
19     x = int(x)
18     sum += x
17     num += 1
16     if x % 2:
15         odd += 1
14     else:
13         even += 1
12     print("第7題", odd, even, sum/num, "\n")
11
10 sum = 0
9 for i in range(2, 101, 2):
8     sum += *(i-1)*(i+1)
7     print("第8題", sum, "\n")
6
5 sum = 0
4 a, n = input().split(' ')
3 a, n = int(a), int(n)
2 b = a
1 print(a, n)
25 for i in range(0, n):
1     sum += b
2     b = b * 10 + a
3     print("第9題", sum)
```

10 题



```
work.py - solution
work.py
13 import random
12
11 x = random.randint(0,9)
10 num = 0
9 while (True):
8     num+=1
7     t = int(input())
6     if (x == t):
5         print("恭喜",num,"次, 你猜中了",sep="")
4         break
3     elif x < t:
2         print("遗憾。太大了")
1     elif x > t:
0         print("遗憾。太小了")
14
```

## 11-14 题

The screenshot shows a Mac OS X desktop environment. In the center is a terminal window with four tabs open, each showing the command line and some output. The tabs are labeled:

- ~ /solution main:116:77 → /opt/homebrew/bin/python3 /Users/syh/solution/work.py
- 第11题 1 33
- 第12题 4972 5827
- 第13题 4.7199651868963945

Below the terminal is another terminal window with two tabs:

- ~ /solution main:116:77 → /opt/homebrew/bin/python3 /Users/syh/solution/work.py
- 第12题 4972 2865

To the left of the terminals is a code editor window titled "work.py". The code contains several sections of pseudocode and Python code. The Python code includes imports for random and numpy, generates two random integers x1 and x2, calculates their gcd and lcm, and prints them. It then counts the number of pairs (x1, x2) where x1 \* x2 is divisible by 10000. It also calculates the sum of the first 366 terms of a series where each term is 1.01 if i % 7 != 6 and i % 7 != 0, or 0.99 otherwise, and prints the result. A while loop at the bottom iterates until a flag becomes False, printing the current sum and breaking the loop if the flag is True.

```
work.py
import random, numpy as np
x1, x2 = random.randint(0, 100), random.randint(0, 100)
print("第11题", np.gcd(x1, x2), np.lcm(x1, x2), '\n')

num0, num1 = 0, 0
for i in range(1, 10000):
    x = random.randint(0, 1)
    if x == 0: num0 += 1
    else: num1 += 1
print("第12题", num0, num1, '\n')

sum = 1
for i in range(1, 366):
    if i % 7 != 6 and i % 7 != 0: sum *= 1.01
    else: sum *= 0.99
print("第13题", sum, '\n')

sum = 9
while (True):
    Flag = True
    if (sum % 8 != 1): Flag = False
    if (sum % 7): Flag = False
    if (sum % 6 != 3): Flag = False
    if (sum % 5 != 1): Flag = False
    if (sum % 4 != 1): Flag = False
    if (sum % 2 != 1): Flag = False
    if (Flag == True):
        print("第14题", sum)
        break
    else:
        sum+=1
```