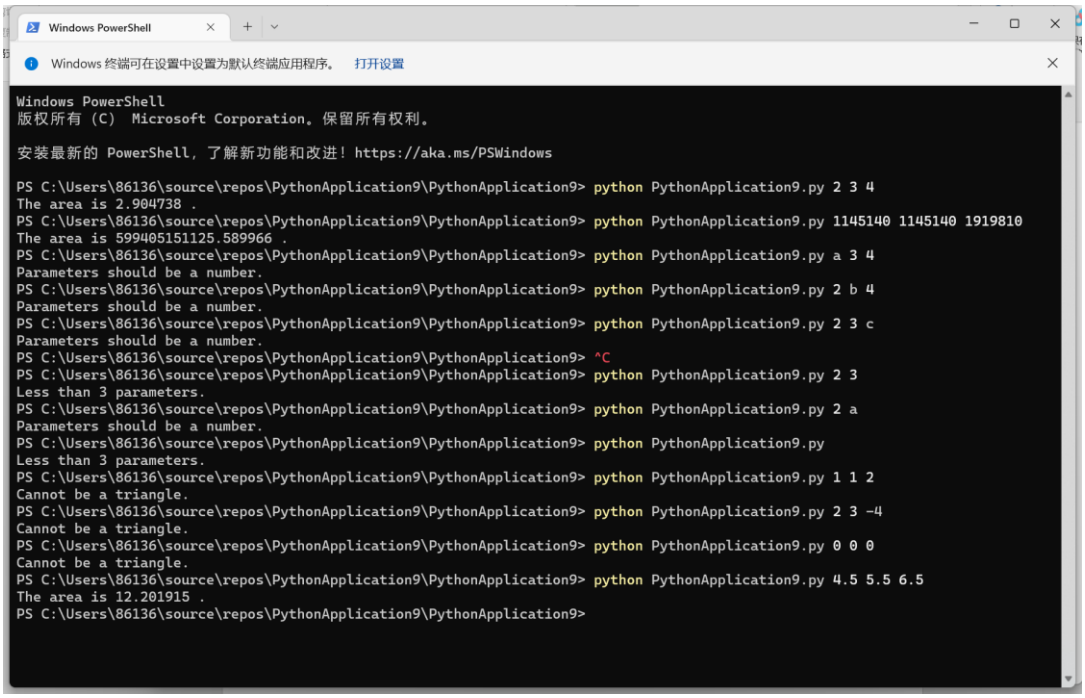
实验2

还是在源文件所在处从Terminal打开，输入操作语句

“python PythonApplication9.py 2 3 4”

即可。后三位是三个参数。

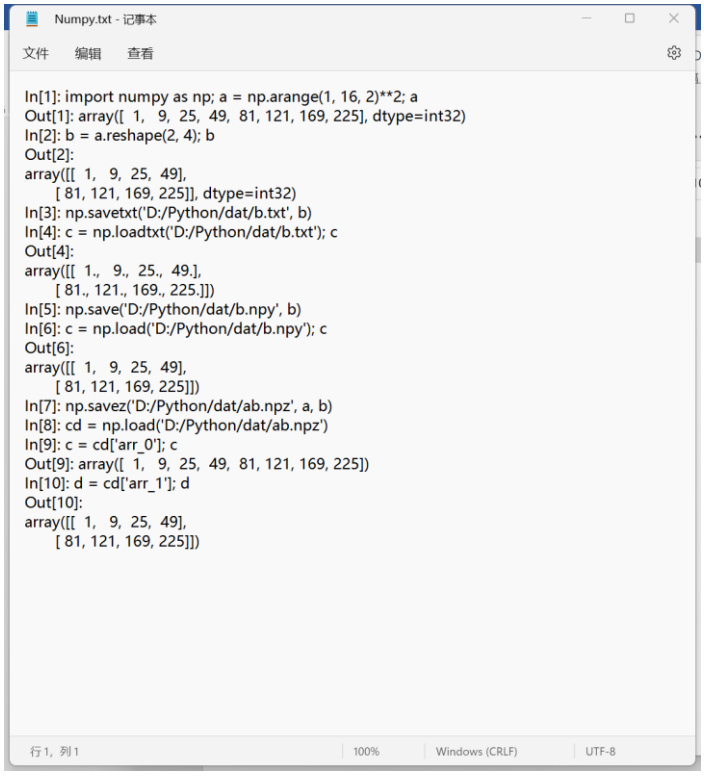
```
import math
def area(a,b,c):
    s=float((a+b+c)/2)
    sum_area=math.sqrt(s*(s-a)*(s-b)*(s-c))
    return sum_area
class InvalidTriangleError(Exception):
    def __init__(self,message):
        self.message=message
import sys
try:
    a=float(sys.argv[1])
    b=float(sys.argv[2])
    c=float(sys.argv[3])
    if((a+b-c)<1E-8 or (b+c-a)<1E-8 or (a+c-b)<1E-8 ):
        raise InvalidTriangleError('Cannot be a triangle.')
except IndexError:
    print('Less than 3 parameters.')
except ValueError:
    print('Parameters should be a number.')
except InvalidTriangleError as ex:
    print(ex.message)
else:
    print('The area is %f .'%(area(a,b,c)))
```

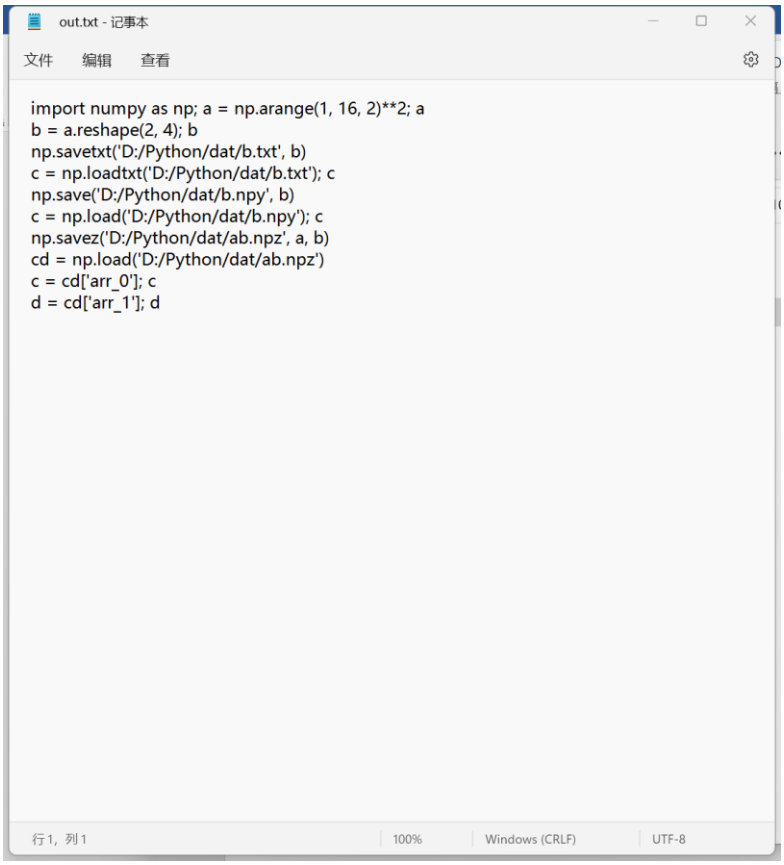


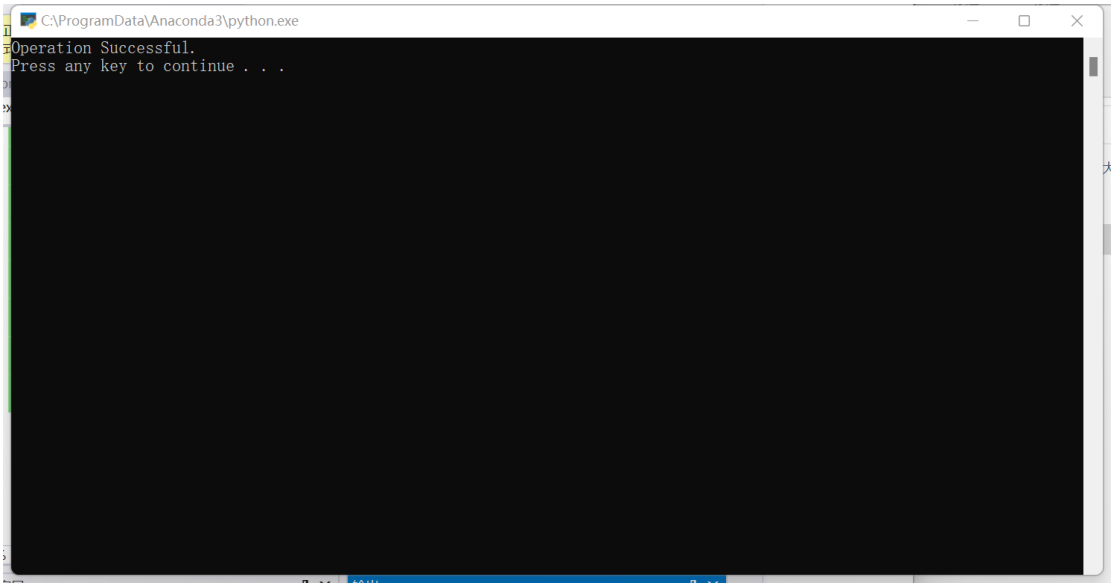
实验 3

实验 3 并不难，这里可以使用 python 保存标准输入流，然后输出重定向到指定文件，完成函数输出以后再回到保存的 SavedStdout，并在控制台给出输出成功提示。strip()删掉数据中的换行符。

```
def extract_data(filename):
    with open(filename,'r') as infile:
        for line in infile :
            if line.find('In')>=0:
                words=line.strip().split(']:')
                print(words[1])
    return
import sys
savedStdout=sys.stdout
with open('out.txt','w+')as file:
    sys.stdout=file
    extract_data('C:/Numpy.txt')
sys.stdout=savedStdout
print("Operation Successful.")
```




out.txt - 记事本
文件 编辑 查看
import numpy as np; a = np.arange(1, 16, 2)**2; a
b = a.reshape(2, 4); b
np.savetxt('D:/Python/dat/b.txt', b)
c = np.loadtxt('D:/Python/dat/b.txt'); c
np.save('D:/Python/dat/b.npy', b)
c = np.load('D:/Python/dat/b.npy'); c
np.savez('D:/Python/dat/ab.npz', a, b)
cd = np.load('D:/Python/dat/ab.npz')
c = cd['arr_0']; c
d = cd['arr_1']; d
行 1，列 1
100%
Windows (CRLF)
UTF-8


C:\ProgramData\Anaconda3\python.exe
Operation Successful.
Press any key to continue . . .