Prac04：

lists\_warmup.py

numbers = [3, 1, 4, 1, 5, 9, 2]  
"""  
numbers[0]=3  
numbers[-1]=2  
numbers[3]=1  
numbers[:-1]=[3, 1, 4, 1, 5, 9]  
numbers[3:4]=[1]  
5 in numbers=True  
7 in numbers=False  
"3" in numbers=False  
numbers + [6, 5, 3]=[3, 1, 4, 1, 5, 9, 2, 6, 5, 3]  
"""  
  
numbers[0]='ten'  
numbers[-1]=1  
print(numbers[2:])  
print(9 in numbers)

total\_income.py

def main():  
 *"""Display income report for incomes over a given number of months."""* incomes = []  
 months\_num = int(input("How many months? "))  
  
 for month in range(1, months\_num + 1):  
 income = float(input("Enter income for month {} : ".format(month)))  
 incomes.append(income)  
  
 print(get\_income(months\_num, incomes))  
  
def get\_income(months\_num, incomes):  
 print("\nIncome Report\n-------------")  
 total = 0  
 for month in range(1, months\_num + 1):  
 income = incomes[month - 1]  
 total += income  
 print("Month {:2} - Income: ${:10.2f} Total: ${:10.2f}".format(month, income, total))  
  
main()

subject\_reader.py

FILENAME = "subject\_data.txt"  
  
def main():  
 data = get\_data()  
 print(data)  
 print(get\_details())  
  
def get\_data():  
 *"""Read data from file formatted like: subject,lecturer,number of students."""* input\_file = open(FILENAME)  
 list = []  
 for line in input\_file:  
 line = line.strip() *# Remove the \n* parts = line.split(',') *# Separate the data into its parts* parts[2] = int(parts[2]) *# Make the number an integer (ignore PyCharm's warning)* list.append(parts)  
 input\_file.close()  
 print(list)  
  
def get\_details():  
 input\_file = open(FILENAME)  
 list = []  
 for line in input\_file:  
 line = line.strip() *# Remove the \n* parts = line.split(',') *# Separate the data into its parts* parts[2] = int(parts[2]) *# Make the number an integer (ignore PyCharm's warning)* list.append(parts)  
 subject = parts[0]  
 name = parts[1]  
 num = parts[2]  
 print('{} is taught by {:<12} and has {:3} students'.format(subject,name,num))  
 input\_file.close()  
  
main()

list\_exercises.py

numbers=[]  
for i in range(1,6):  
 num=int(input('Number: '))  
 numbers.append(num)  
  
print(numbers)  
print('The first number is ',numbers[0])  
print('The last number is',numbers[-1])  
print('The smallest number is',min(numbers))  
print('The largest number is',max(numbers))  
print('The average of the numbers is',sum(numbers)/len(numbers))

usernames = ['jimbo', 'giltson98', 'derekf', 'WhatSup', 'NicolEye', 'swei45', 'BaseInterpreterInterface', 'BaseStdIn', 'Command', 'ExecState', 'InteractiveConsole', 'InterpreterInterface', 'StartServer', 'bob']  
username=str(input('Enter username: '))  
if username in usernames:  
 print('Access granted')  
else:  
 print('Access denied')

list\_comprehensions.py

names = ["Bob", "Angel", "Jimi", "Alan", "Ada"]  
full\_names = ["Bob Martin", "Angel Harlem", "Jimi Hendrix", "Alan Turing",  
 "Ada Lovelace"]  
  
*# for loop that creates a new list containing the first letter of each name*first\_initials = []  
for name in names:  
 first\_initials.append(name[0])  
print(first\_initials)  
  
*# list comprehension that does the same thing as the loop above*first\_initials = [name[0] for name in names]  
print(first\_initials)  
  
*# list comprehension that creates a list containing the initials  
# splits each name and adds the first letters of each part to a string*full\_initials = [name.split()[0][0] + name.split()[1][0] for name in  
 full\_names]  
print(full\_initials)  
  
*# one more example, using filtering to select only the names that start with A*a\_names = [name for name in names if name.startswith('A')]  
print(a\_names)  
  
*# TODO: use a list comprehension to create a list of all of the full\_names  
# in lowercase format*lowercase\_full\_names = [name.lower() for name in full\_names]  
print(lowercase\_full\_names)  
  
almost\_numbers = ['0', '10', '21', '3', '-7', '88', '9']  
*# TODO: use a list comprehension to create a list of integers  
# from the above list of strings*numbers = [int(num) for num in almost\_numbers]  
print(numbers)  
  
*# TODO: use a list comprehension to create a list of only the numbers that are  
# greater than 9 from the numbers (not strings) you just created*numbers\_bigger\_nine = [num for num in numbers if num>9]  
print(numbers\_bigger\_nine)

quick\_picks.py

*# Choose sets of random numbers*import random  
num\_line=6  
quick\_pick=int(input('How many quick picks? '))  
  
for i in range(quick\_pick):  
 CONSTANTS = []  
 for n in range(6):  
 num=random.randint(1, 45)  
 while num in CONSTANTS:  
 num = random.randint(1, 45)  
 CONSTANTS.append(num)  
 CONSTANTS.sort()  
 print(" ".join("{:2}".format(num) for num in CONSTANTS))