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B9

OSSLab Assignment 2

Q1

```
for i in range(0,4):
    print("hello, world")
```

Output:

```
hello, world
hello, world
hello, world
hello, world
```

Q2

```
def duplicate(lst):
    lst1 = []
    for i in lst:
        if i not in lst1:
            lst1.append(i)
        else:
            print(i,end=' ')
lst = [1,2,3,4,5,2,3,4,7,9,5]
duplicate(lst)
```

Output:

```
2 3 4 5
```

Q3

```
def group(x,l):
    gl=[]
    g=[]
    i=0
    while i<len(x):
        if(len(gl)<l):
            gl.append(x[i])
            i=i+1
        else:
            g.append(gl)
            gl=[]
    g.append(gl)
```

```
    return g
group([1,3,2,2,9,7,2,4],3)
```

Output:

```
[[1, 3, 2], [2, 9, 7], [2, 4]]
```

Q4

```
xs = ['dddd','a','bb','ccc']
sorted(xs, key=len)
```

Output:

```
['a', 'bb', 'ccc', 'dddd']
```

Q5

```
import os
def extsort(x):
    i=0
    while(i<len(x)):
        x[i]=x[i].split('.')
        i=i+1
    x.sort(key=lambda x:x[1])
    i=0
    while(i<len(x)):
        x[i]=".".join(x[i])
        i=i+1
    return x
print(extsort(['a.c','a.py','b.py','bar.txt','foo.txt','x.c']))
```

Output:

```
['a.c', 'x.c', 'a.py', 'b.py', 'bar.txt', 'foo.txt']
```

Q6

```
f=open("new.txt","w+")
for i in range(10):
    f.write("This is sample text and line no %d\r\n" %(i+1))
f.close()
f = open("new.txt","r")
if f.mode == 'r':
    contents = f.read()
    print (contents)
```

Output:

```
This is sample text and line no 1

This is sample text and line no 2

This is sample text and line no 3
```

```
This is sample text and line no 4

This is sample text and line no 5

This is sample text and line no 6

This is sample text and line no 7

This is sample text and line no 8

This is sample text and line no 9

This is sample text and line no 10
```

Q7

```
file = open("sample.txt","r")
number_of_lines = 0
number_of_words = 0
number_of_characters = 0
for line in file:
    line = line.strip("\n")
    words = line.split()
number_of_lines += 1
number_of_words += len(words)
number_of_characters += len(line)
file.close()
print("lines:",number_of_lines,"words:",number_of_words,"characters:",number_
of_characters)
```

Output:

```
lines: 1 words: 2 characters: 13
```

Q8

```
textfile = open("sample.txt")
lines = textfile.readlines()
for line in reversed(lines):
    print(line)
textfile.close()
```

Output:

```
Welcome again


Goodbye
```

```
Welcome



Hello world!
```

Q9

```
def revline(x):
    i=0
    z=len(open(x).readlines())
    rev=[None]*z
    f=open(x)
    while(i<z):
         rev[i]=f.readline()
         rev[i]=rev[i].strip()
         print(rev[i][::-1])
         i=i+1
revline("sample.txt")
```

Output:

```
!dlrow olleH

emocleW

eybdooG

niaga emocleW
```

Q10

```
def wrap(filename,k):
    f=open(filename).readlines()
    for i in f:
        new = i
        while len(new)>k:
            print(new[:k])
            new=new[k:]
            print(new)
wrap("sample.txt",5)
```

Output:

```
Hello
 world!

 worl
d!
```

```
Welco
me

Goodb
ye

Welco
me again
me ag
ain
```

Q11

```
def num(n):
    return n*2
lst = [x for x in range(10)]
x = map(num,lst)
print(list(x))
```

Output:

```
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18]
```

Q12

```
even_squares = [x*x for x in range(10) if x %2 == 0]
print(even_squares)
```

Output:

```
[0, 4, 16, 36, 64]
```

Q13

```
def triplets(n):
    return[(a,c-a,c) for c in range(2,n) for a in range(1,c//2+1)]
triplets(4)
```

Output:

```
[(1, 1, 2), (1, 2, 3)]
```

Q14

```
import csv

with open('employee_birthday.txt', mode='r') as csv_file:
    csv_reader = csv.DictReader(csv_file)
    line_count = 0
    for row in csv_reader:
        if line_count == 0:
            print(f'Column names are {", ".join(row)}')
            line_count += 1
        print(f'\t{row["name"]} works in the {row["department"]} department,
and was born in {row["birthday month"]}.')
```

```
        line_count += 1
    print(f'Processed {line_count} lines.')
```

Output:

```
Column names are name, department, birthday month
      John Smith works in the Accounting department, and was born in
November.
      Erica Meyers works in the IT department, and was born in March.
      Sam Wilson works in the Marketing department, and was born in July.
Processed 4 lines.
```

Q15

```
import csv

with open('employee_birthday.txt') as csv_file:
    csv_reader = csv.reader(csv_file, delimiter=',')
    line_count = 0
    for row in csv_reader:
        if line_count == 0:
            print(f'Column names are {", ".join(row)}')
            line_count += 1
        else:
            print(f'\t{row[0]} works in the {row[1]} department, and was born
in {row[2]}.')
            line_count += 1
    print(f'Processed {line_count} lines.')
```

Output:

```
Column names are name, department, birthday month
      John Smith works in the Accounting department, and was born in
November.
      Erica Meyers works in the IT department, and was born in March.
      Sam Wilson works in the Marketing department, and was born in July.
Processed 4 lines.
```

Q16

```
def mutate(d):
    ret=[d]
    i=0
    l=len(d)
    alp=map(chr,range(97,123))

    while i<l:
          cop=d
    ret.append(cop[:i]+cop[i+1:])
if    i<=l-2:
        ret.append(cop[:i]+cop[i+1]+cop[i]+cop[i+2:])
elif  i<l-1:
        ret.append(cop[:i]+cop[i+1]+cop[i])
```

```
for x in alp:
        ret.append(cop[:i]+x+cop[i+1:])
for x in alp:
              ret.append(d+x)
              ret.append(x+d)
              ret.append(cop[:i]+x+cop[i:])
i=i+1
return ret
print ('hefllo') in mutate('hello')
print ('hllo') in mutate('hello')
```

Q17

```
def nearly_equal(str1,str2):
    count=0
    i=0
    j=0
    while(i<len(str1) and j<len(str2)):
        if(str1[i]!=str2[j]):
            count=count+1
            if(len(str1)>len(str2)):
                i=i+1
            elif(len(str1)==len(str2)):
                 pass
            else:
                 i=i-1
            if(count>1):
                 return False
                 i=i+1
                 j=j+1
            if(count<2):
                 return True
str1=input("Enter first string: ")
str2=input("Enter second string: ")
boolean=nearly_equal(str1,str2)
if(boolean):
                 print("Strings are nearly equal")
else:
                 print("Strings are not equal")
```

Output:

```
Enter first string: Rise
Enter second string: risee
Strings are nearly equal
```

Q18

```
f="sample.txt"
file= open(f,"r")
a=[]
b={}
for i in file:
```

```
    for j in range(0,len(i)):
        a.append(i[j])
for i in a:
    if i in b:
        b[i]+=1
    else:
        b[i]=1
print(b)
c=f.split(".")
if c[1]=="txt":
    print("\n\nIt is a text file")
elif c[1]=="cpp":
    print("\n\nIt is a C++ file")
else:
    print("\n\nIt is a C file")
```

Output:

```
{'H': 1, 'e': 6, 'l': 5, 'o': 6, ' ': 2, 'w': 1, 'r': 1, 'd': 2, '!': 1,
'\n': 6, 'W': 2, 'c': 2, 'm': 2, 'G': 1, 'b': 1, 'y': 1, 'a': 2, 'g': 1, 'i':
1, 'n': 1}


It is a text file
```

Q19

```
def anagrams(x):
    from itertools import permutations
    s={}
    while len(x)>0:
        x1=x.pop()
        s[x1]=s.get(x1,[])
        s[x1].append(x1)
        i=0
        while i<len(x):
            z1=x[i]
            perm=[''.join(p) for p in permutations(x1)]
            if z1 in perm:
                x.remove(z1)
                s[x1].append(z1)
            else:i=i+1
        return s.values()
print(anagrams(['tae','souep','eat','ihba','node','peuos','ate','abhi','bhia'
,'done','soupe','tea']))
```

Output:

```
dict_values([['tea', 'tae', 'eat', 'ate']])
```