CS 171

Lab Assignment 10

This lab assignment uses many elements provided in the main bibliographic reference for

these lectures:

Programming in Python 3

A Complete Introduction to the Python Language,

2nd Edition,

Mark Summerfield

**Exercises**

**Exercise 1 File Extension**

Write a method named **extension** that takes a directory and a specified extension and returns the names of all files of that type in that directory.

Suppose we have a directory called test. We stored 6 files: my.txt, e1.png, name.jpg, e2.png, info.docx, photo.png .

Example:

>>> extension(test, ‘png’)

output: [‘e1.png’, ‘e2.png’, ‘photo.png’]

**Exercise 2 The Median**

Given two sorted arrays nums1 and nums2 of size m and n respectively, return the median of the two sorted arrays.

Note: Can’t use sorted() method.

Examples:

>>> nums1=[1,3], nums2=[2]

output: 2

>>> nums1=[1,3], nums2=[2,4]

output: 2.5

>>> nums1=[], nums2=[1]

output: 1

**Exercise 3. String Encryption**

Write a function named **encrypt**, which get a string as parameter and return an encrypted string. The encryption method is: A into b, B into c...Y into z, Z becomes a; a becomes B, b into C...Z becomes a, other characters are consistent.

Tips:

ord() returns the ASCII value of the character;

chr() returns the character corresponding to the current ASCII code.

Example:

>>> encrypt(‘.I love LanZhou University.’)

output: ‘.j MPWF mBOaIPV vOJWFSTJUZ.’

**Exercise 4. Triangle Area**

Write a function named **triangle\_area** to calculate the area of a triangle, and pass three numbers as function parameters. If these numbers can make up a triangle, then return the area of the triangle, if not, return False.

Examples:

>>> triangle\_area(1,2,3)

False

>>> triangle\_area(3,4,5)

6.0

**Exercise 5 Palindromic String**

Given a string s, return the longest palindromic substring in s.

Tips: Palindromic string reads the same backward or forward.

Examples:

>>> s = ’babab’

output: ‘bab’

>>> s =‘cbbd’

output: ‘bb’

>>> s = ‘a’

output: ‘a’

>>> s = ‘acc’

output: ‘cc’