1.

x = int(input('x = '))

n = int(input('n = '))

def e\_x(n):

factor = 1

Sum = 1

for i in range(1,n+1):

factor \*= i

a = (x\*\*i)/factor

Sum += a

return Sum

print(e\_x(n))

2.

import re

msg1 = str(input("請輸入字串："))

def parseString(string):

phoneRule = re.compile(r'\d\d\d\d-\d\d\d-\d\d\d')

phoneNum = phoneRule.search(string)

if phoneNum != None:

print(string, '包含台灣手機號碼')

else:

print(string, '不包含台灣手機號碼')

parseString(msg1)

3.

from PIL import Image, ImageDraw

newImage = Image.new('RGB', (300, 300), 'Red')

drawObj = ImageDraw.Draw(newImage)

for x in range(100, 200, 3):

for y in range(100, 200, 3):

drawObj.point([x, y], fill = 'Black')

drawObj.line([(0, 0), (299, 0), (299, 299), (0, 299), (0, 0)], fill = 'Blue')

for x in range(150, 300, 10):

drawObj.line([(x, 0), (300, x-150)], fill = 'Black')

for x in range(150, 0, -10):

drawObj.line([(x, 0), (0, 150-x)], fill = 'Black')

for y in range(150, 300, 10):

drawObj.line([(0, y), (y-150, 300)], fill = 'Black')

for y in range(300, 150, -10):

drawObj.line([(300, 450-y), (y, 300)], fill = 'Black')

newImage.save('3.jpg')

4.

class CRect:

def \_\_init\_\_(self,width,height,length):

self.width=width

self.height=height

self.length=length

def area(self):

return self.width\*self.length

def volume(self):

return self.width\*self.length\*self.height

def show(self):

area = self.width\*self.length

volume = self.width\*self.length\*self.height

print('面積為',area)

print('體積為',volume)

a = CRect(10,20,30)

b = CRect(40,20,60)

c = CRect(50,70,100)

a.show()

print('')

b.show()

print('')

c.show()

5.

from tkinter import \*

import tkinter.messagebox

import sys

import os

tk = Tk()

tk.title("OOXX")

p1 = StringVar()

p2 = StringVar()

bclick = True

flag = 0

def disableButton():

button1.configure(state=DISABLED)

button2.configure(state=DISABLED)

button3.configure(state=DISABLED)

button4.configure(state=DISABLED)

button5.configure(state=DISABLED)

button6.configure(state=DISABLED)

button7.configure(state=DISABLED)

button8.configure(state=DISABLED)

button9.configure(state=DISABLED)

def btnClick(buttons):

global bclick, flag

if buttons["text"] == " " and bclick == True:

buttons["text"] = "O"

bclick = False

checkForWin()

flag += 1

elif buttons["text"] == " " and bclick == False:

buttons["text"] = "X"

bclick = True

checkForWin()

flag += 1

else:

tkinter.messagebox.showinfo("Tic-Tac-Toe", "Button already Clicked!")

def checkForWin():

if (button1['text'] == 'X' and button2['text'] == 'X' and button3['text'] == 'X' or

button4['text'] == 'X' and button5['text'] == 'X' and button6['text'] == 'X' or

button7['text'] =='X' and button8['text'] == 'X' and button9['text'] == 'X' or

button1['text'] == 'X' and button5['text'] == 'X' and button9['text'] == 'X' or

button3['text'] == 'X' and button5['text'] == 'X' and button7['text'] == 'X' or

button1['text'] == 'X' and button2['text'] == 'X' and button3['text'] == 'X' or

button1['text'] == 'X' and button4['text'] == 'X' and button7['text'] == 'X' or

button2['text'] == 'X' and button5['text'] == 'X' and button8['text'] == 'X' or

button7['text'] == 'X' and button6['text'] == 'X' and button9['text'] == 'X'):

disableButton()

tkinter.messagebox.showinfo("OOXX", "X Wins!")

elif(flag == 8):

tkinter.messagebox.showinfo("OOXX", "It is a Tie")

elif (button1['text'] == 'O' and button2['text'] == 'O' and button3['text'] == 'O' or

button4['text'] == 'O' and button5['text'] == 'O' and button6['text'] == 'O' or

button7['text'] == 'O' and button8['text'] == 'O' and button9['text'] == 'O' or

button1['text'] == 'O' and button5['text'] == 'O' and button9['text'] == 'O' or

button3['text'] == 'O' and button5['text'] == 'O' and button7['text'] == 'O' or

button1['text'] == 'O' and button2['text'] == 'O' and button3['text'] == 'O' or

button1['text'] == 'O' and button4['text'] == 'O' and button7['text'] == 'O' or

button2['text'] == 'O' and button5['text'] == 'O' and button8['text'] == 'O' or

button7['text'] == 'O' and button6['text'] == 'O' and button9['text'] == 'O'):

disableButton()

tkinter.messagebox.showinfo("OOXX", "O Wins!")

def restart():

python = sys.executable

os.execl(python, python, \* sys.argv)

buttons = StringVar()

button1 = Button(tk, text=' ', width=8, command=lambda: btnClick(button1))

button1.grid(row=0, column=0)

button2 = Button(tk, text=' ', width=8, command=lambda: btnClick(button2))

button2.grid(row=0, column=1)

button3 = Button(tk, text=' ', width=8, command=lambda: btnClick(button3))

button3.grid(row=0, column=2)

button4 = Button(tk, text=' ', width=8, command=lambda: btnClick(button4))

button4.grid(row=1, column=0)

button5 = Button(tk, text=' ', width=8, command=lambda: btnClick(button5))

button5.grid(row=1, column=1)

button6 = Button(tk, text=' ', width=8, command=lambda: btnClick(button6))

button6.grid(row=1, column=2)

button7 = Button(tk, text=' ', width=8, command=lambda: btnClick(button7))

button7.grid(row=2, column=0)

button8 = Button(tk, text=' ', width=8, command=lambda: btnClick(button8))

button8.grid(row=2, column=1)

button9 = Button(tk, text=' ', width=8, command=lambda: btnClick(button9))

button9.grid(row=2, column=2)

button10 = Button(tk, text='重新開始', width=8, command= restart)

button10.grid(row=3, column=1)

tk.mainloop()