2315028 김성현

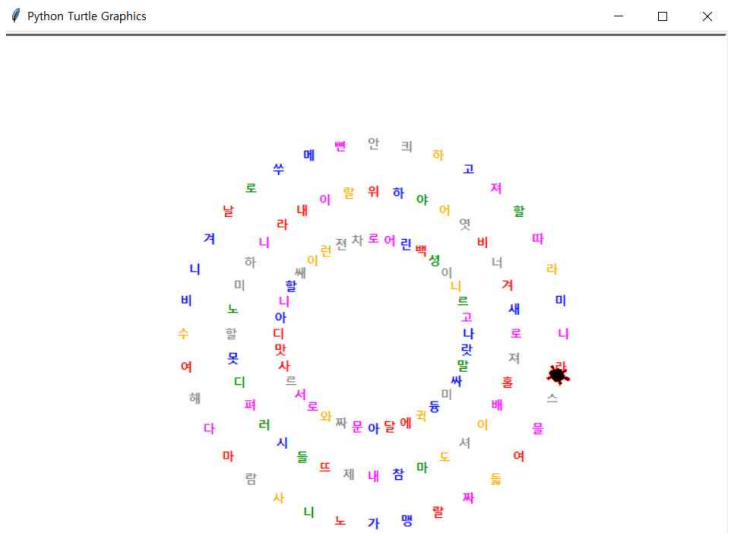
8장 10번

```
#10번

def calcu() :
    num1 = float(input("숫자 1 ==> "))
    num2 = float(input("숫자 2 ==> "))

    print(num1, "+", num2, "=", num1+num2)
    print(num1, "-", num2, "=", num1-num2)
    print(num1, "*", num2, "=", num1*num2)
    print(num1, "/", num2, "=", num1/num2)

calcu()
```

```
================ RESTART: C:₩Users₩HOME₩OneDrive₩바탕 화면₩프입문 과제₩8장₩10번.py ===
===========
숫자 1 ==> 3
숫자 2 ==> 7
3.0 + 7.0 = 10.0
3.0 - 7.0 = -4.0
3.0 * 7.0 = 21.0
3.0 / 7.0 = 0.42857142857142855

================ RESTART: C:₩Users₩HOME₩OneDrive₩바탕 화면₩프입문 과제₩8장₩10번.py ===
===========
숫자 1 ==> 5.8
숫자 2 ==> 3.14
5.8 + 3.14 = 8.94
5.8 - 3.14 = 2.6599999999999997
5.8 * 3.14 = 18.212
5.8 / 3.14 = 1.8471337579617833
```

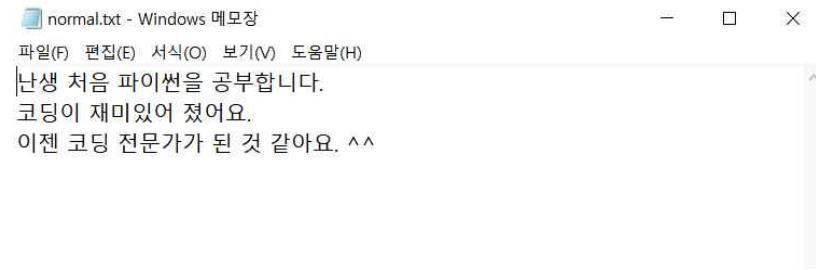
8장 11번

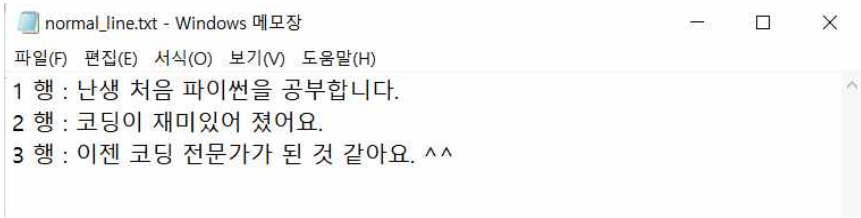
```
#11번
import random
import turtle

def writeKorean36(ch, radius, angle) :
    turtle.goto(0,0)
    color = random.choice(colorList)
    turtle.pencolor(color)
    turtle.forward(radius)
    turtle.right(angle)
    turtle.write(ch, font=("맑은고딕", 10, 'bold'))

colorList = ['red', 'blue', 'magenta', 'orange', 'green', 'gray']
koreanStr = """ 나랏말싸미 듕귁에 달아 문짜와로 서르 사맛디 아니할쌔 이런 젼차로 어린 백셩이 니르고
            져 홀 배 이셔도 마참내 제 뜨들 시러 펴디 못할 노미 하니라 내 이랄 위하야 어엿비 너겨 새로
            스믈여듧 짜랄 맹가노니 사람마다 해여 수비 니겨 날로 쑤메 뻔안희 하고져 할 따라미니라 """

turtle.shape('turtle')
turtle.penup()
turtle.speed(5)

i = 0
radius = 100

for ch in koreanStr :

    if ch != " " :
        angle = 0
        i += 1
        angle += 10

        writeKorean36(ch, radius, angle)

        if i%37==0 :
            radius += 50

        if angle == 360 :
            angle = 0
```



9장 8번

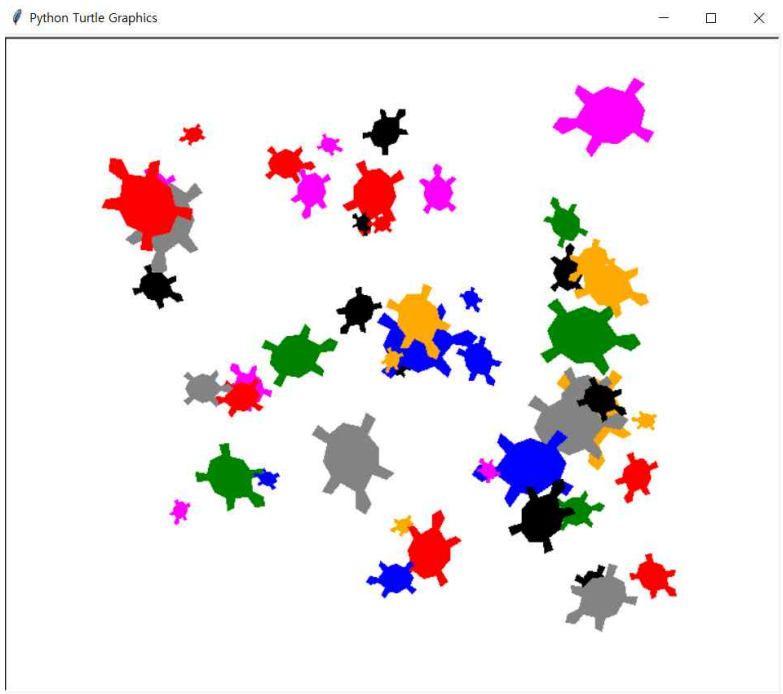
```
#8번
outFile = None
inFile = None
outStr = ""
inStr = ""
num = 1

inFile = open("D:/FirstPython/normal.txt", "r", encoding="UTF-8")
outFile = open("D:/FirstPython/normal_line.txt", "w")

while True :
    inStr = inFile.readline()
    if inStr == "" :
        break
    outFile.writelines(str(num) + " 행 : " + str(inStr))
    num += 1

inFile.close()
outFile.close()
```





9장 9번

```
#9번
import turtle
import random
outFile = None
inFile = None
inStr = ""
res = ""
inList = []
outFile = open("D:/FirstPython/turtle.txt", "w")
colorList = ['red', 'blue', 'gray', 'black', 'magenta', 'orange','green']

turtle.screensize(500,500)
turtle.shape('turtle')
turtle.penup()
turtle.speed(5)

for i in range(50) :
    color = random.choice(colorList)
    size = random.randint(1,4)
    x = random.randint(-250,250)
    y = random.randint(-250,250)
    angle = random.randint(0,360)

    res = color + ", " + str(size) + ", " + str(x) + ", " + str(y) + ", " + str(angle) + ", ₩n"
    outFile.writelines(res)
outFile.close()

inFile = open("D:/FirstPython/turtle.txt", "r", encoding="UTF-8")
inList = inFile.readlines()

for inStr in inList :
    turtle.stamp()
    turtle.fillcolor(inStr.split(", ")[0])
    turtle.pencolor(inStr.split(", ")[0])
    turtle.turtlesize(int(inStr.split(", ")[1]))
    turtle.goto(int(inStr.split(", ")[2]),int(inStr.split(", ")[3]))
    turtle.right(int(inStr.split(", ")[4]))

inFile.close()
turtle.done()
```



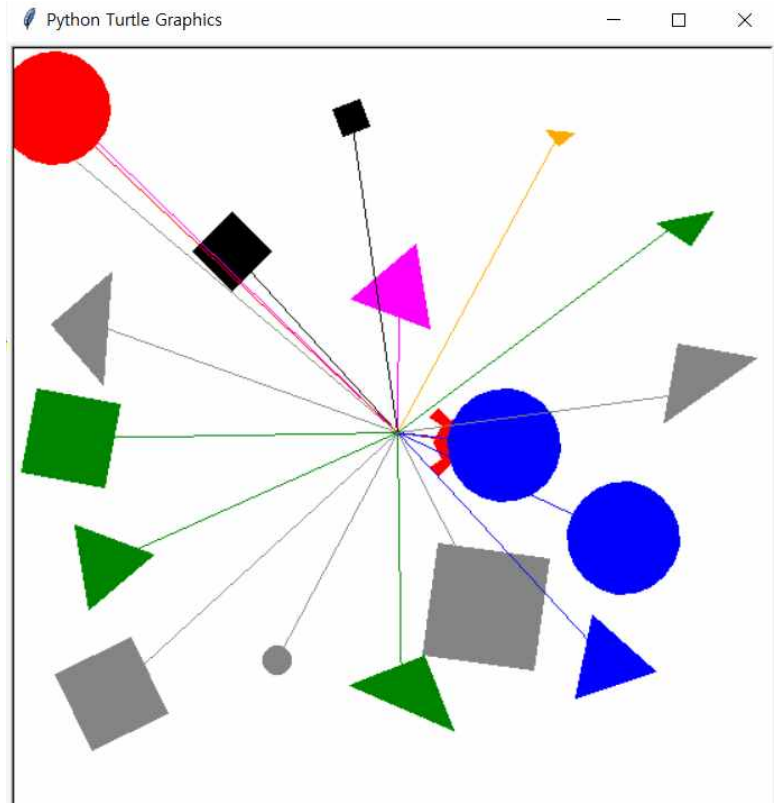
10장 9번

```
#9번
class Car :
    color=''
    speed=0
    def __init__(self, color):
        self.color=color
        self.speed=0
    def upSpeed(self, up):
        self.speed+=up
    def downSpeed(self, down):
        self.speed-=down

car1=Car('빨강')
car2=Car('파랑')

car1.upSpeed(30)
car2.upSpeed(100)
car2.downSpeed(40)

print('차량1의 색상은',car1.color,'이고, 현재 속도는',car1.speed,'입니다.')
print('차량2의 색상은',car2.color,'이고, 현재 속도는',car2.speed,'입니다.')
```

```
=============== RESTART: C:₩Users₩HOME₩OneDrive₩바
===========
차량1의 색상은 빨강 이고, 현재 속도는 30 입니다.
차량2의 색상은 파랑 이고, 현재 속도는 60 입니다.
```

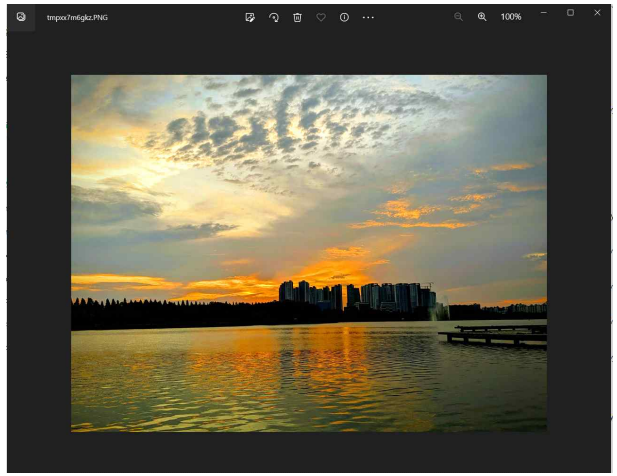
10장 10번

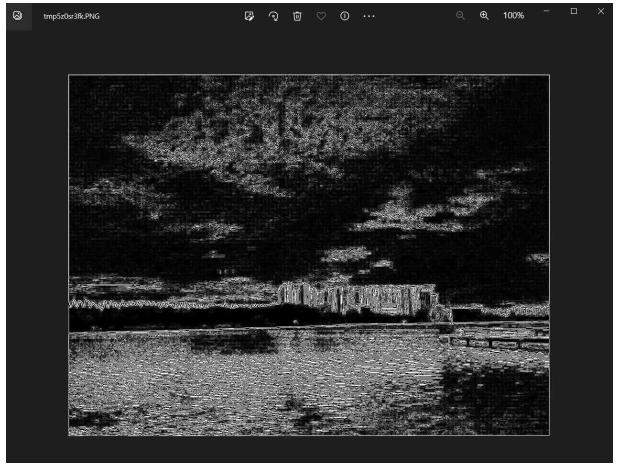
```
#10번
import turtle
import random

class Rabbit:

    myTurtle = None

    def __init__(self, shape, size, angle, color, x, y):
        self.myTurtle = turtle.Turtle()
        self.myTurtle.shape(shape)
        self.myTurtle.shapesize(size)
        self.myTurtle.color(color)
        self.myTurtle.goto(x, y)
        self.myTurtle.pendown()
        self.myTurtle.setheading(angle)

colorList =  ['red', 'green','blue', 'gray', 'black', 'magenta', 'orange']
shapeList = ['turtle','triangle','circle','square','arrow']
turtle.setup(550, 550)
turtle.screensize(500,500)

for _ in range(20):
    shape = random.choice(shapeList)
    size = random.randint(1,4)
    angle = random.randint(0,360)
    color = random.choice(colorList)
    x=random.randint(-250,250)
    y=random.randint(-250,250)
    myRab = Rabbit(shape, size, angle, color, x, y)

turtle.done()
```



11장 11번

```
import PIL
import random
from PIL import Image, ImageFilter, ImageEnhance, ImageOps

number=random.randint(1, 99)
if number < 10:
    number = '0' + str(number)
else:
    number = str(number)

filename = 'D:/firstpython/picture/picture'+number+'.jpg'
img = Image.open(filename)
img.show()

while True:
    al=int(input('1:좌우반전, 2:상하버전, 3:회전, 4:흑백, 5:엠보싱, 6:스케치, 7:경계선, 0:종료 ==>'))
    if al==1:
        img = img.transpose(Image.FLIP_LEFT_RIGHT)
    if al==2:
        img = img.transpose(Image.FLIP_TOP_BOTTOM)
    if al==3:
        img = img.rotate(45, expand=True)
    if al==4:
        img = ImageOps.grayscale(img)
    if al==5:
        img = img.filter(ImageFilter.EMBOSS)
    if al==6:
        img = img.filter(ImageFilter.CONTOUR)
    if al==7:
        img = img.filter(ImageFilter.FIND_EDGES)
    if al==0:
        break

img.show()
```

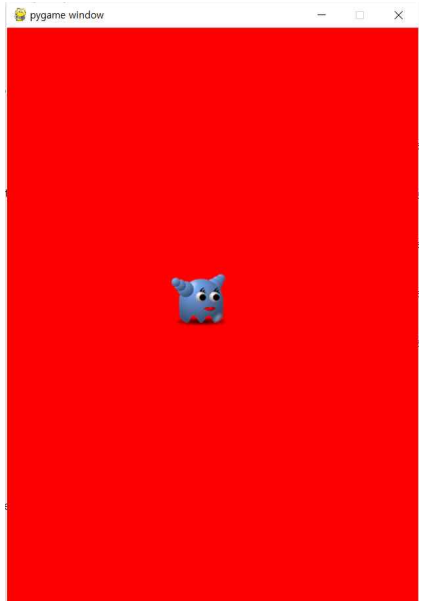


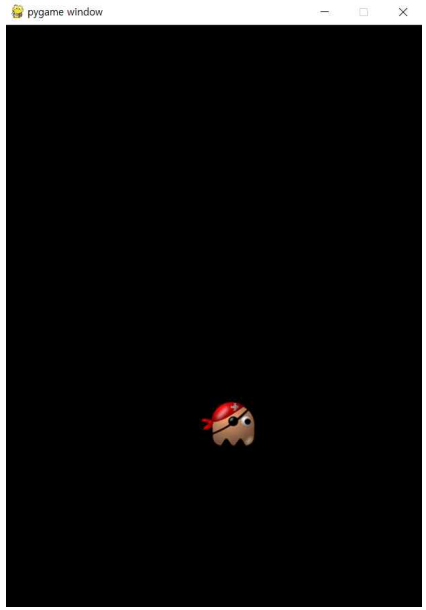


```
============== RESTART: C:₩Users₩HOME₩OneDrive₩바탕 화면₩프입문 과제₩11장₩11번
==========
1:좌우반전, 2:상하버전, 3:회전, 4:흑백, 5:엠보싱, 6:스케치, 7:경계선, 0:종료 ==>4
1:좌우반전, 2:상하버전, 3:회전, 4:흑백, 5:엠보싱, 6:스케치, 7:경계선, 0:종료 ==>6
1:좌우반전, 2:상하버전, 3:회전, 4:흑백, 5:엠보싱, 6:스케치, 7:경계선, 0:종료 ==>7
1:좌우반전, 2:상하버전, 3:회전, 4:흑백, 5:엠보싱, 6:스케치, 7:경계선, 0:종료 ==>0
```

11장 12번

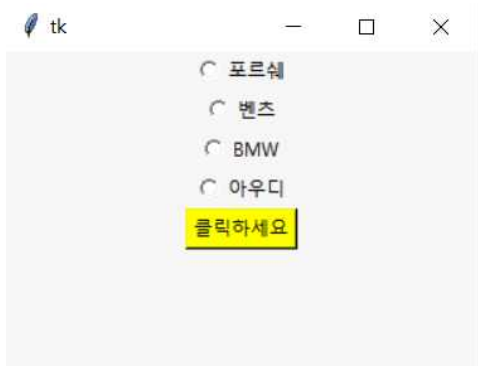
```
import pygame
import random
import sys

monitor = None
colorList = ['red','green','blue','black','magenta','orange','gray']
imageList = ['turtles','t0','t1','t2','t3','t4','t5','t6','t7','t8','t9']

pygame.init()
monitor=pygame.display.set_mode((500,700))
color=random.choice(colorList)
img = 'D:/firstpython/picture/'+random.choice(imageList)+'.png'
img = pygame.image.load(img)
tx, ty = 200, 300

while True:
    monitor.fill(color)
    monitor.blit(img, (tx,ty))
    pygame.display.update()

    for e in pygame.event.get():
        if e.type in [pygame.QUIT]:
            pygame.quit()
            sys.exit()

        if e.type in [pygame.KEYDOWN] :
            if e.key == pygame.K_SPACE :
                tx = random.randint(0,500)
                ty = random.randint(0,700)
                color=random.choice(colorList)
                img = 'D:/firstpython/picture/'+random.choice(imageList)+'.png'
                img = pygame.image.load(img)
```

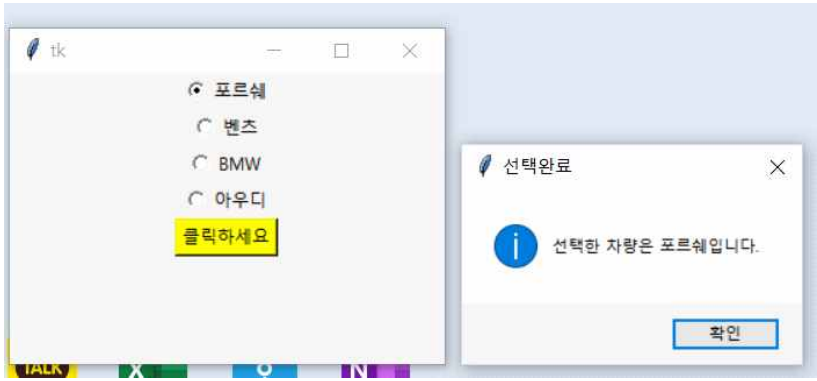




12장 10번

```
from tkinter import *
from tkinter import messagebox

def myChoice():
    if myVar.get() == 1:
        name='포르쉐'
    elif myVar.get() == 2:
        name='벤츠'
    elif myVar.get() == 3:
        name='BMW'
    elif myVar.get() == 4:
        name='아우디'
    messagebox.showinfo('선택완료', '선택한 차량은 ' + name + '입니다.')

root = Tk()
root.geometry('300x200')

myVar = IntVar()
rb1 = Radiobutton(root, text='포르쉐', variable=myVar, value=1)
rb1.pack()
rb2 = Radiobutton(root, text='벤츠', variable=myVar, value=2)
rb2.pack()
rb3 = Radiobutton(root, text='BMW', variable=myVar, value=3)
rb3.pack()
rb4 = Radiobutton(root, text='아우디', variable=myVar, value=4)
rb4.pack()

button1=Button(root, text='클릭하세요', bg='yellow', command=myChoice)

button1.pack()
root.mainloop()
```





12장 11번

```
from tkinter import *
import random

def press(e):
    global start_x, start_y
    start_x, start_y = e.x, e.y

def release(e):
    global end_x, end_y
    end_x, end_y = e.x, e.y

    canvas.create_rectangle(start_x, start_y, end_x, end_y,
                            outline=random.choice(colorList), width=5)

def change_color(e):
    global colorList
    colorList = ['red', 'green', 'yellow', 'purple', 'black']

root = Tk()

canvas = Canvas(root, height=500, width=500)
canvas.pack()

colorList = ['red', 'green', 'yellow', 'purple', 'black']

canvas.bind('<Button-1>', press)
canvas.bind('<ButtonRelease-1>', release)
canvas.bind('<Button-3>', change_color)

root.mainloop()
```