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# Turtle 활용하기

6주차\_02

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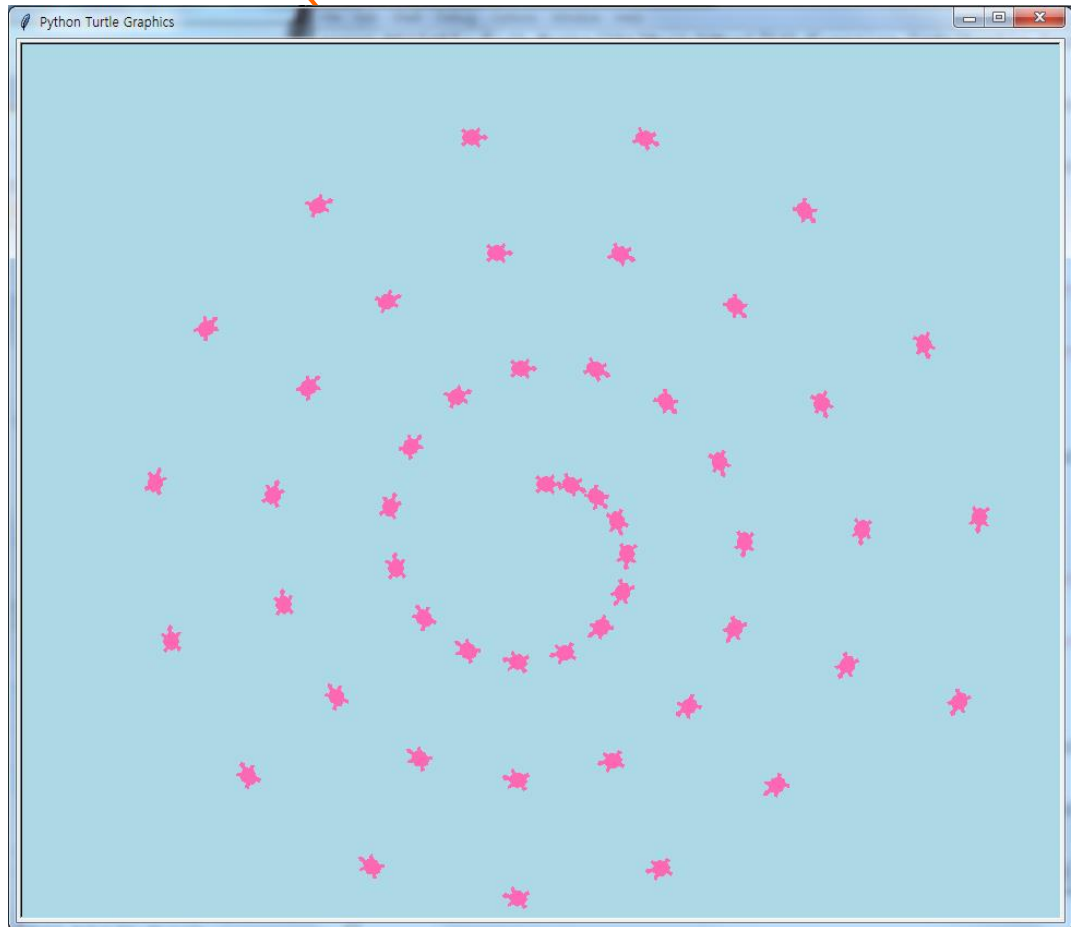
# 미로그리기

```
import turtle
```

```
wn = turtle.Screen()  
wn.bgcolor("lightblue")  
t = turtle.Turtle()  
t.shape("turtle")  
t.color("hotpink")
```

```
t.penup()  
size = 20
```

```
for i in range(50):  
    t.stamp()  
    size = size + 3  
    t.forward(size)  
    t.right(24)
```

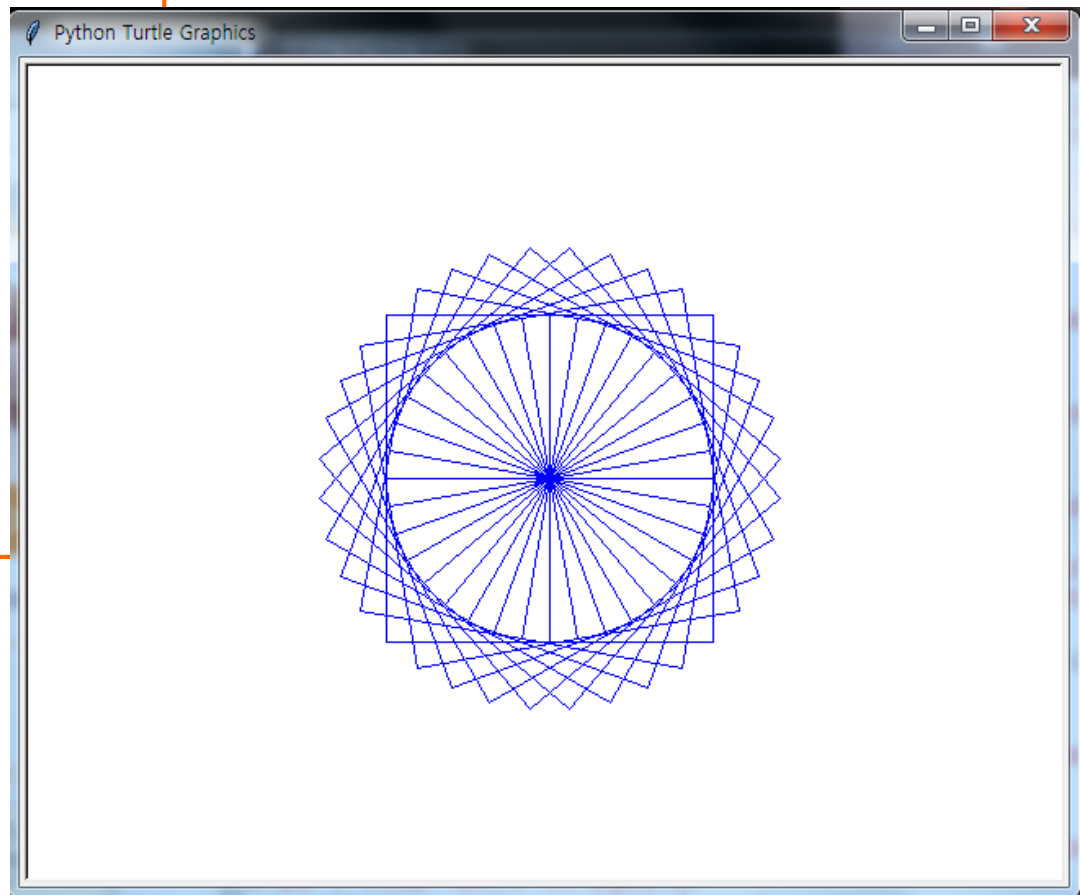


# 정사각형 36개 배치

```
import turtle
```

```
t = turtle.Turtle()  
t.color('blue')
```

```
for i in range(36):  
    t.left(10)  
    for j in range(4):  
        t.forward(100)  
        t.left(90)
```



# 점점 커지는 정사각형 36개

```
import turtle

win=turtle.Screen()
win.bgcolor('black')

t = turtle.Turtle()
t.color('red')

for i in range(36):
    t.forward(10+i*5)
    t.left(90)
    t.forward(10+i*5)
    t.left(90)
    t.forward(10+i*5)
    t.left(90)
    t.forward(10+i*5)
    t.left(80)
```



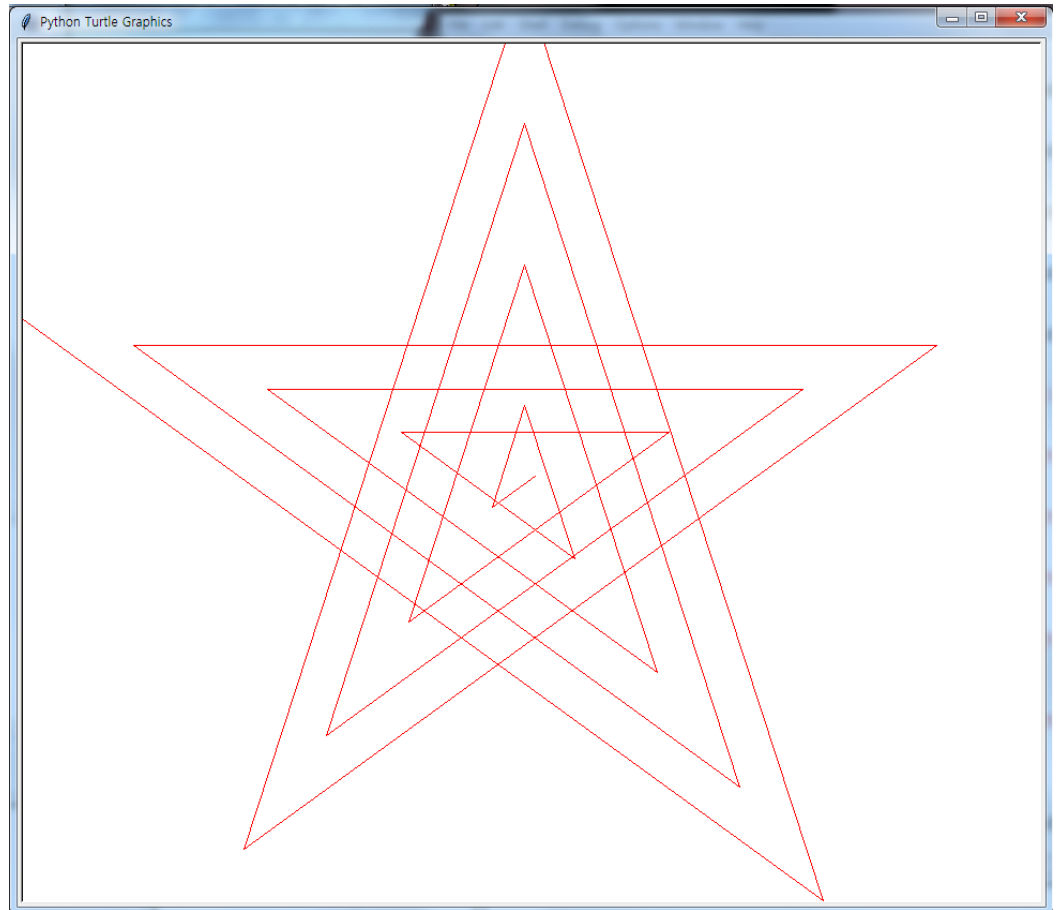
# 점점 커지는 별

```
import turtle
```

```
star=turtle.Turtle()  
star.color('red')
```

```
for i in range(20):  
    star.forward(i*50)  
    star.right(144)
```

```
turtle.done()
```



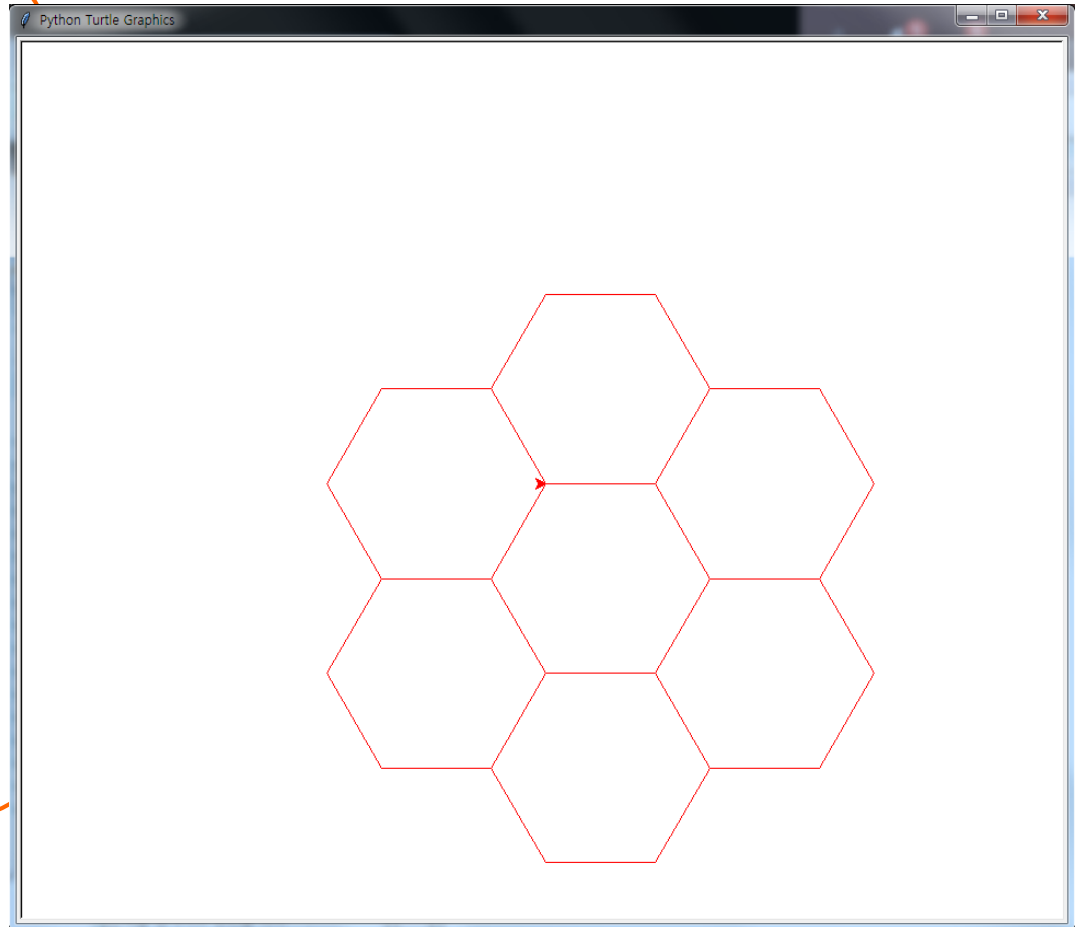
# 벌집 그리기, 함수

```
import turtle

def hexagon():
    for i in range(6):
        turtle.forward(100)
        turtle.left(60)

turtle.color('red')
hexagon()

for i in range(6):
    hexagon()
    turtle.forward(100)
    turtle.right(60)
```



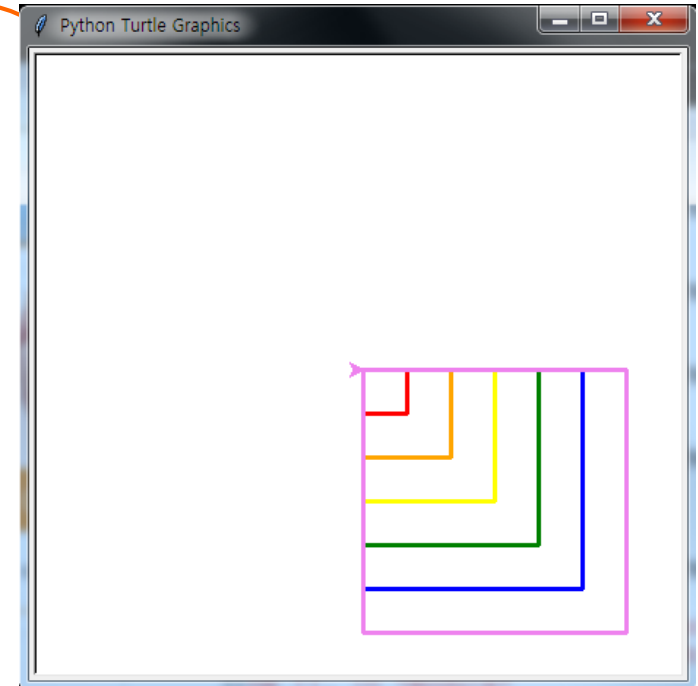
# 여러가지 색 정사각형 그리기, 함수

```
import turtle

def square(t, size, color):
    t.color(color)
    for i in range(4):
        t.forward(size)
        t.right(90)

t1 = turtle.Turtle()
t1.pensize(3)
colors = ['red', 'orange', 'yellow', 'green', 'blue', 'violet']

i=30
for color in colors:
    square(t1, i, color)
    i=i+30
```



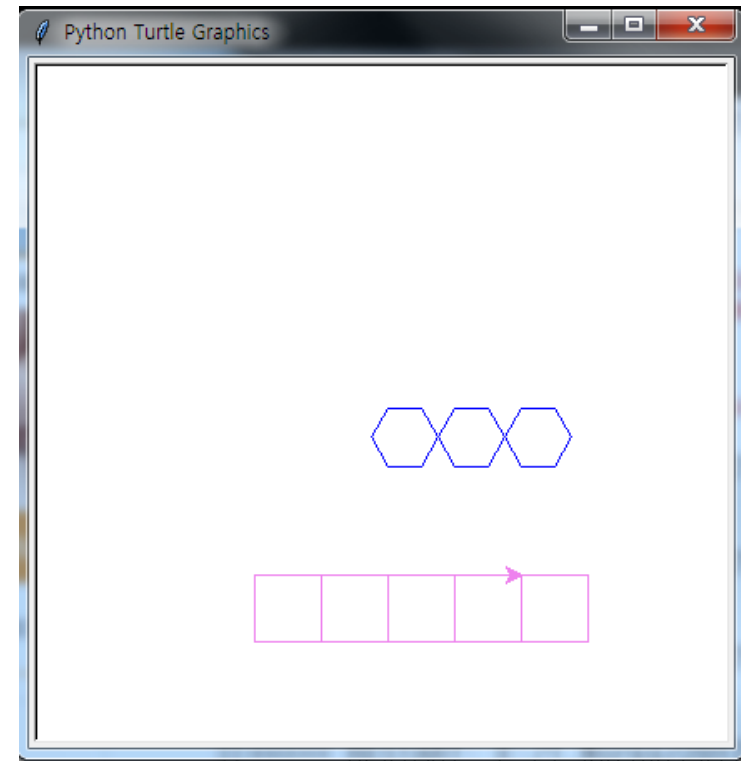
# 다각형 그리기, 함수

```
import turtle
t=turtle.Turtle()

def drawPolygon(sideLength, numSides, color):
    t.color(color)
    turnAngle= 360 / numSides
    for i in range(numSides):
        t.pendown()
        t.forward(sideLength)
        t.right(turnAngle)

for i in range(3):
    t.penup()
    t.setposition(40*i, 0)
    drawPolygon(20, 6, "blue")

for i in range(5):
    t.penup()
    t.setposition(40*(i-2), -100)
    drawPolygon(40, 4, "violet")
```





# 꽃 그리기, 함수

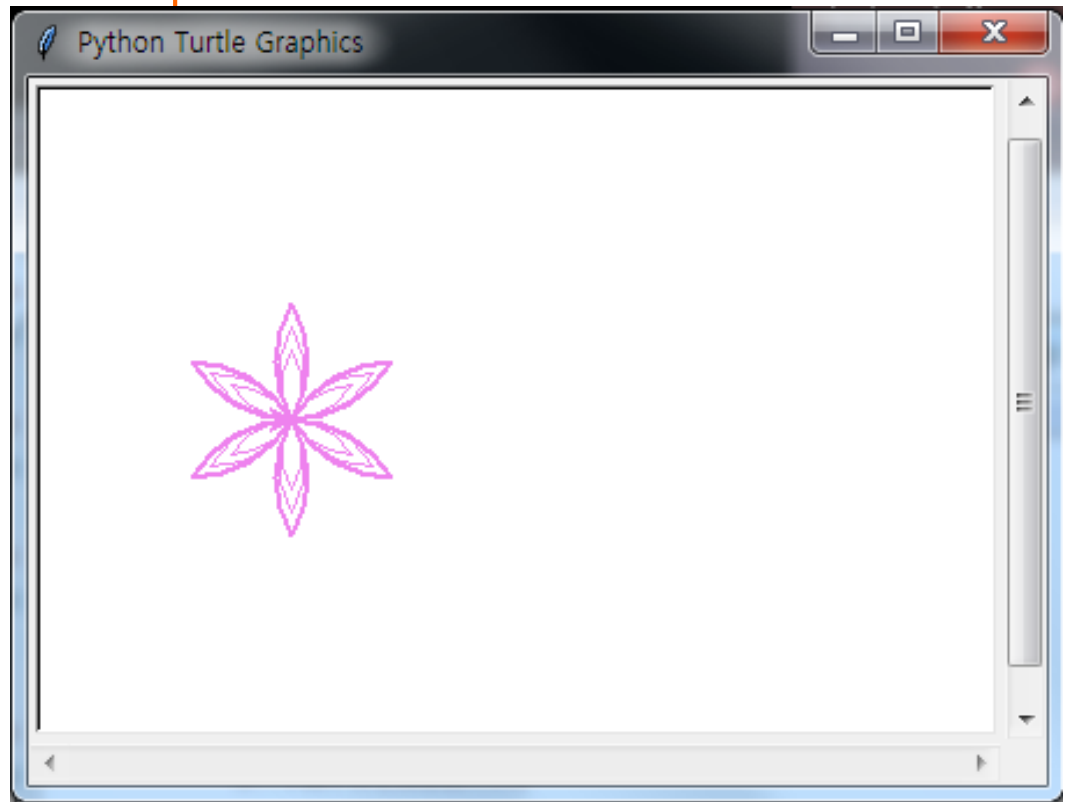
```
import turtle
```

```
def flower(t, n, r, angle):  
    for i in range(n):  
        for i in range(2):  
            t.circle(r,angle)  
            t.left(180-angle)  
        t.left(360/n)
```

```
def move(t, length):  
    t.pu()  
    t.fd(length)  
    t.pd()
```

```
b = turtle.Pen()  
b.color("violet")  
move(b, -100)
```

```
for i in range(3):  
    flower(b, 6, 30+(10*i), 60.0)  
    b.width(2*i)
```



# 여러 개 원 출력, 함수

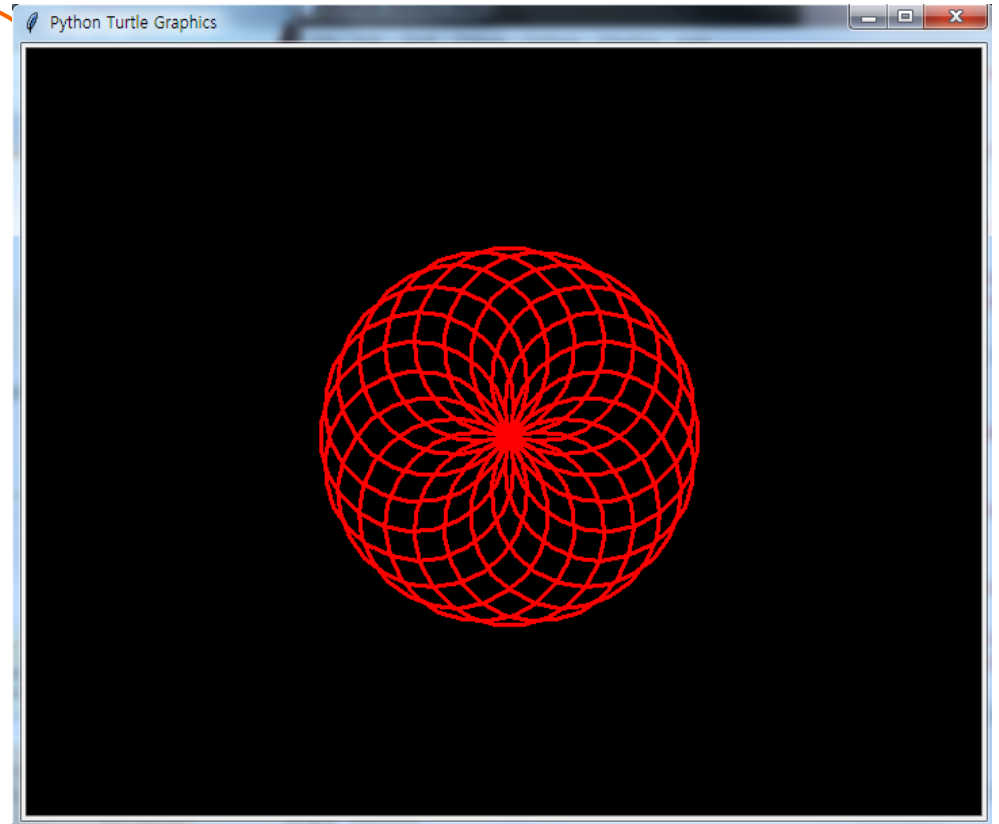
```
import turtle

win=turtle.Screen()
win.bgcolor('black')

one = turtle.Turtle()
one.color('red')
one.pensize(3)

def n_one(n, size):
    for i in range(n):
        one.circle(size)
        one.left(360.0/n)

n_one(20, 70)
```



# 연습문제 1

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- 정사각형 5개를 규칙적으로 위치를 바꾸어서 그리기

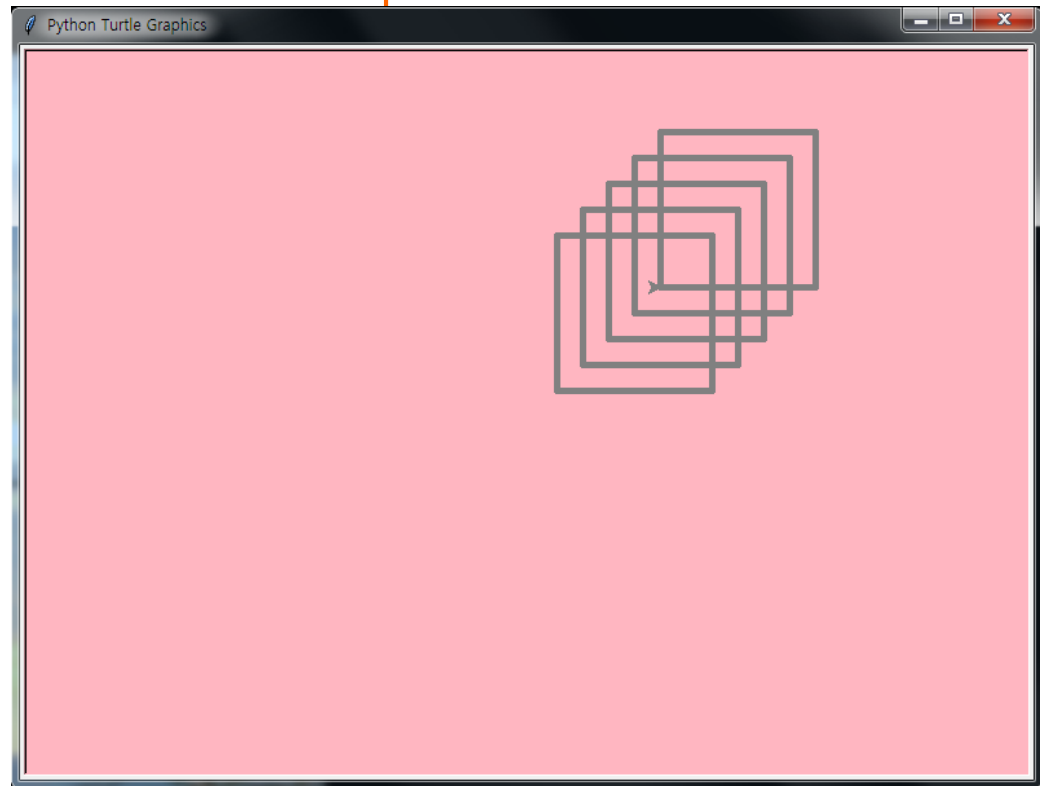
# 연습문제 1, 코드와 결과

```
import turtle
```

```
wn = turtle.Screen()  
wn.bgcolor("lightpink")
```

```
a = turtle.Turtle()  
a.color("grey")  
a.pensize(5)
```

```
for i in range(20, 110, 20) :  
    a.penup()  
    a.goto(i,i)  
    a.pendown()  
    for j in range(4):  
        a.forward(120)  
        a.left(90)
```



# 연습문제 2

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- 여러가지 색 정사각형 그리기 예제 수정
  - 색상을 10가지 지정
  - 사각형 크기가 25씩 커지게 하기

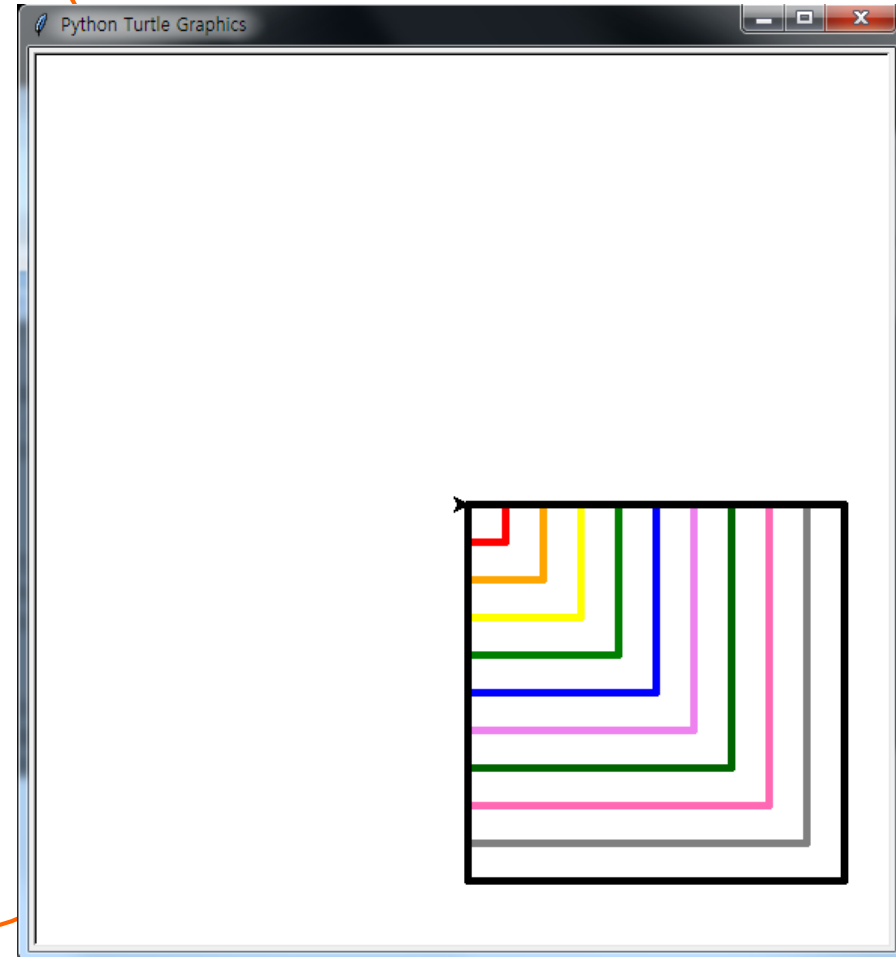
# 연습문제 2, 코드와 결과

```
import turtle
```

```
def square(t, size, color):  
    t.color(color)  
    for i in range(4):  
        t.forward(size)  
        t.right(90)
```

```
t1 = turtle.Turtle()  
t1.pensize(5)  
colors = ['red', 'orange', 'yellow', 'green', 'blue',  
'violet', 'darkgreen', 'hotpink', 'grey', 'black']
```

```
i=25  
for color in colors:  
    square(t1, i, color)  
    i=i+25
```



## 연습문제 3

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- 다각형을 그리는 다음 함수를 사용하여 5각형과 8각형을 그리시오

```
import turtle
t=turtle.Turtle()

def drawPolygon(sideLength, numSides, color):
    t.color(color)
    turnAngle= 360 / numSides
    for i in range(numSides):
        t.pendown()
        t.forward(sideLength)
        t.right(turnAngle)
```

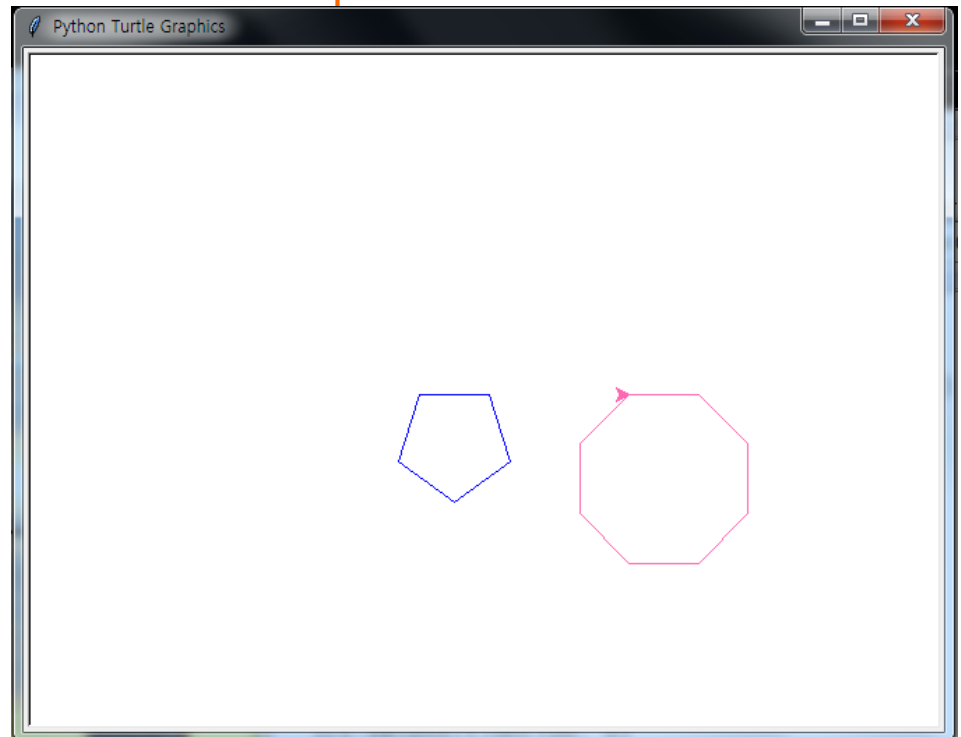
# 연습문제 3, 코드와 결과

```
import turtle
t=turtle.Turtle()

def drawPolygon(sideLength, numSides, color):
    t.color(color)
    turnAngle= 360 / numSides
    for i in range(numSides):
        t.pendown()
        t.forward(sideLength)
        t.right(turnAngle)

t.penup()
t.setposition(-50, 0)
drawPolygon(50, 5, 'blue')

t.penup()
t.setposition(100, 0)
drawPolygon(50, 8, 'hotpink')
```





# 숙제

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- 연습문제 1, 2, 3 코드와
- 실행결과 캡처 한 사진을 게시판에 올려주세요!

# 요약

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- Turtle 활용하여 다양한 모양 그려보기
- 반복문 활용하기
- 함수 활용하기

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# 감사합니다

6주차\_02 Turtle 활용하기