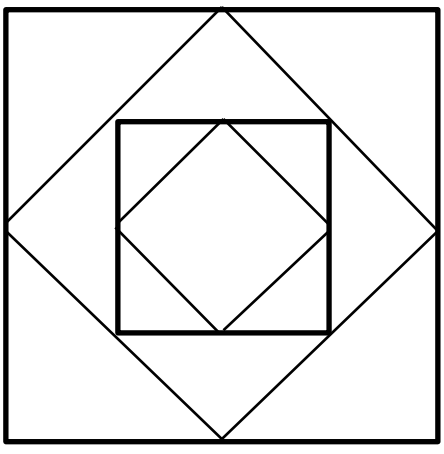
Non-Textbook Lab 4: Turtles & Loops & Modules, Oh My! (20 points)

Objectives: Practice with turtle graphics, for loops, and modules

Start: From NT Lab 4 on Canvas, download the starter code: **`squares.py`**. It should look like this when you view it in your text editor. It should draw a square. Run it to make sure it works.

```
import turtle                   #import the turtle module
import math                             #import the math module

screen = turtle.Screen() # Open a turtle screen
screen.bgcolor("yellow")# set screen's background color


ted = turtle.Turtle()           # Create a turtle; call it ted

sideLength = 300                #set length of first square's side to 300

for i in range(4):              # draw a square: do the following 4 times
    ted.forward(sideLength)     # draw a line 150 pixels long
    ted.left(90)                # turn left to be ready for next line


screen.exitonclick()            # close screen when user clicks on it
```

Once the program works: Change it to first ask the user how many squares to draw. Assuming the user enters an integer > 0, the program draws a square, then draws a 2nd square with corners at the **midpoints** of the sides of the 1st square, and continues drawing squares, each with corners at the midpoints of the sides of the previous square, until it has drawn the specified number of squares. *Hint: the sides of each square are shorter than those of the previous square. To update the sideLength for each new square, use this code:* **`sideLength = sideLength/math.sqrt(2).`**



Submitting

Test and run the programs in the terminal on your computer before submitting.

When done, upload your edited **`squares.py`** to NT Lab 4 in Canvas.

Ask a TA, Tutor, or Professor for help if you need it.