

Lab 7 – Python Programs with Turtle Graphics

Task 0 - Get Organised.

- Create a new folder lab7 in your folder labs.

Task 1 – Square theme

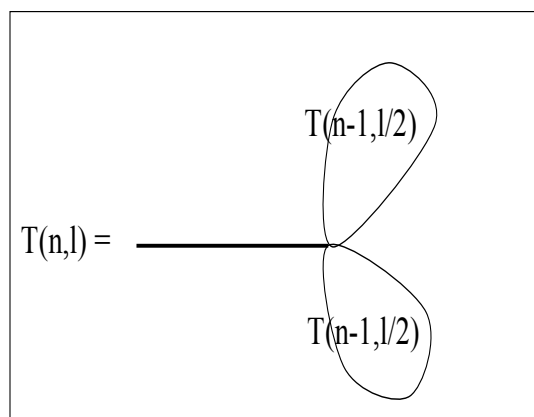
This task requires you to write some functions to draw a square or multiple squares using a turtle.

- Create the turtle pen and set some features for it.
- Write a function `square(x1,y1, w)` to draw a square from $(x1, y1)$ with the width w .
 - Goto $(x1, y1)$ without drawing
 - For 4 times
 - Forward and turn right 90
- Call the function `square` and see the first turtle drawing.
- Write a function that draws multiple squares
 - For several times
 - Draw a square
 - Turn left with some angle
- Write a function that draws multiple squares at some random locations
 - For several times
 - Get some random locations
 - Set a random color
 - Draw a square
 - Turn left with some angle

Task 2 – Binary Tree

This task is to draw the binary tree and then perhaps you can attempt the quadratic tree (tree with 4 branches).

- Follow the definition and write the recursive function for the tree as below



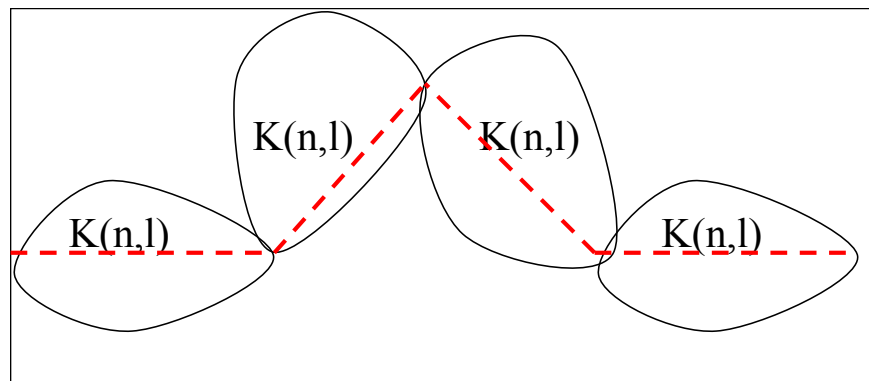
- Create a pen and set some features including the `speed(0)`

- Set the initial position of the turtle to get benefit of the canvas / screen
- Then call the function for various values of n and l .
- Do similarly for a tree with 4 branches.

Task 3 – Snowflake

This task is to draw the snowflake. Do not forget that the snowflake is made of 3 koch curves.

- Follow the definition and write the recursive function for the Kock curve as below



- Then write the function (not recursive) for the flake
- Create a pen and set some features including the speed(0)
- Set the initial position of the turtle to get benefit of the canvas / screen
- Then call the function for various values of n and l .