

Outline for January 11

Reading: Wentworth *et al.*, §3.1, 3.4.1

Assignments: Homework 1, due on January 18 at 11:55pm

1. chaos program, incomplete version [*chaos.py*]
 - a. Comments
 - b. Function `input()` gets input as a string from user
 - c. Function `float()` converts data to a floating point number
 - d. Assignment to variable; evaluate right hand side first
 - e. For loop generally
 - i. Built-in `range()` function
 - ii. Index variable `i` initialized to 0
 - iii. Expression using multiplication, subtraction, and variables
 - iv. Printing a number
 - f. Behavior with initial values of 0.25 and 0.26
 - g. Lack of error checking: what happens if I enter `-0.01`?
2. Turtle graphics
 - a. What turtle is; `import turtle`
3. Drawing a figure: a box with a hat [*tbox.py*]
 - a. Set up the window to draw in: `Screen()`
 - b. Create the turtle: `Turtle`
 - c. Cursor for drawing
 - d. Move cursor forward: `forward`, `backward()`
 - e. Turn cursor: `left()`, `right()`
 - f. Wait for the window to close: `mainloop()`
4. Titles, background, and such [*tfancybox.py*]
 - a. Window
 - i. Color of the window background: `background()`
 - ii. Title of the window: `title`
 - b. Turtle, more properly called “pen”
 - i. Shape of the turtle: `shape()`
 - ii. Speed of the drawing: `speed()`
 - iii. Color of the drawn line: `color()`
 - iv. Thickness of the line (pixels): `pensize()`
 - v. Hide the turtle: `hideturtle()`
5. Plotting points and graphing
 - a. Drawing lines: `penup()`, `pendown()`
 - b. Move turtle: `setpos()`
 - c. Write text: `write()`
 - d. Draw a dot at the current position: `dot()` [*tchaosdots.py*]
 - e. Draw a line from the current position to another: `goto()` [*tchaosline.py*]