CS 146 Fall 2024 – Quiz 2 "Cheat Sheet"

Numeric Operators

+, -, /, *: Addition, subtraction, division, multiplication

//: Floor division: Round division result down to nearest whole number

%: Modulus: Evaluate to remainder of division

- Range

range(stop): Equivalent to range(0, stop, 1)

range(start, stop[, step]): Create sequence of integers from inclusive **start** to exclusive **stop** by **step**

Precedence (equal precedence evaluated left-to-right):

parentheses > ** > negate > *,/,//,% > +,-

Strings

- The following functions are built-in

  len(string): Returns the number of characters in the string

  int(string), float(string): Converts numeric string to int or float

  str(object): Converts object, e.g. int or float, to a string

- String operators

  string1 + string2: Returns a new string that is the concatenation of string1 and string2

  string * int: Returns a new string that is string repeated int times

Modules

- **turtle** module

  forward(dist), backward(dist): Move the turtle forward/backward by the length dist. Doesn't change heading.

  right(angle) left(angle): Turn the turtle right/left by angle (in degrees)

  goto(x, y): Move turtle to position x, y

  setheading(angle): Set the turtles heading to angle

  circle(radius): Draw a circle with specified radius; the center is radius units left of the turtle

  dot(size): Draw a filled circle with diameter size centered on current position of the turtle

  penup(): Pull the pen up – no drawing when moving

  pendown(): Put the pen down – drawing when moving

  fillcolor(color): Change the fill color to color, where color is a string

  begin_fill(), end_fill(): Start and end filling shapes with fill color

- **random** module

  randint(a, b): Return a random integer N such that a ≤ N ≤ b

  uniform(a, b): Return a random floating point number N such that a ≤ N ≤ b

- **math** module

  sqrt(num): Return the square root of num