

CS 150 Fall 2022 – Quiz 1 “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**

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 $a \leq N \leq b$

uniform(a, b): Return a random floating point number `N` such that $a \leq N \leq b$

- **math** module

sqrt(num): Return the square root of `num`