Turtle Methods

Name	Parameters	Description
	Move and Draw	
`forward fd`	Distance	Move the turtle forward
`backward back bk`	Distance	Move the turtle backward
`right rt`	Angle	Turns the turtle clockwise
`left lt`	Angle	Turns the turtle counterclockwise
`goto` setpos setposition	x, y	Moves turtle to position (x, y)
`setx`	x	Changes turtle's x position, leaves y position unchanged
`sety`	y	Changes turtle's y position, leaves x position unchanged
`setheading seth`	Angle	Makes the turtle face the given angle
`home`	None	Moves the turtle to position (0,0) facing at angle 0
`dot`	size, color	Parameters are optional. Draws a dot
`stamp`	none	Stamps a copy of the turtle's shape and returns a *stamp_id*
`clearstamp`	*stamp_id*	Removes the stamp
`undo`	none	Undo (repeatedly) the last turtle action(s)
`speed`	0 . . . 10	Set turtle's speed. Speed 0 means no animation
	`'slowest'`	Set turtle's speed to 1
	`'slow'`	Set turtle's speed to 3
	`'normal'`	Set turtle's speed to 6
	`'fast'`	Set turtle's speed to 10
	`'fastest'`	Set turtle's speed to 0
`reset`	None	Delete drawing, recenter turtle, set variables to default values
`clear`	None	Delete drawing
`write`	String	Writes the string
`hideturtle ht`	None	Make turtle invisible - draws faster
`showturtle st`	None	Makes turtle visible
`isvisible`	None	Return True if turtle is visible, False otherwise
`getscreen`	None	Return the screen the turtle is drawing on.
`shape`	Name	Set shape to `arrow`, `turtle`, `circle`, `square`, `triangle`, `classic`
	Get Turtle's State	
`position pos`	None	Return the turtle's (x,y) position
`xcor`	None	Return the turtle's x coordinate
`ycor`	None	Return the turtle's y coordinate
`heading`	None	Return the turtle's current heading
`distance`	x, y	Returns the distance from turtle to (x, y)
	Settings for Measurements	
`degrees`	Increments	Number of increments in a full circle. Default is 360
`radians`	None	Sets angle measurement to radians
	Pen Control	
`pendown down pd`	None	Put the pen down
`penup up pu`	None	Pick the pen up
`pensize width`	Width	Set(get) pen width. With no parameter, returns pen width
`isdown`	None	Returns True if pen is down, False if pen is up
	Color Control	
`pencolor`	None	Return pen color
	(r, g, b)	Set pen color
	r, g, b	Set pen color
	colorstring	See `http://www.tcl.tk/man/tcl8.4/TkCmd/colors.htm`
`fillcolor`	Same as `pencolor`	Set fill color
`color`	Same as `pencolor`	Sets both pen and fill color
	Filling	
`begin_fill`	None	Called just before drawing shape to be filled.
`end_fill`	None	Fill the shape drawn since `begin_fill` was called
`filling`	None	Return True if filling, False otherwise

Turtle Screen Methods

Name	Parameters	Description
Window Control		
`bgcolor`	Same as `pencolor`	Set background color
`clearscreen clear`	None	Delete all drawings and turtles & reset TurtleScreen
`resetscreen reset`	None	Reset all turtles to their initial state
`screensize`	width, height	Change size of screen
`setworldcoordinates`	llx, lly, urx, ury	Set coordinate system
`delay`	milliseconds	Set (or return) delay between canvas updates
`tracer`	Integer n	Only each n^{th} update is drawn. Zero turn animation off.
`update`	None	Draw screen. Used when `tracer` is set to zero.
`bye`	None	Closes the window.
`setup`	width, height	Set size of main window.

Example

```
# turtleDemo.py
import turtle


def makeTurtle():
    turtle.setup(450, 450)
    myWindow = turtle.Screen()
    myWindow.bgcolor('CornflowerBlue')
    myWindow.title('In class turtle Demo')

    return turtle.Turtle()


def main():
    cuff = makeTurtle()

    # Now do the drawing
    cuff.forward(100)
    cuff.right(90)
    cuff.forward(100)
    cuff.goto(0, 0)

    cuff.forward(100)
    cuff.right(90)
    cuff.forward(100)
    cuff.goto(0, 0)

    cuff.forward(100)
    cuff.right(90)
    cuff.forward(100)
    cuff.goto(0, 0)

    cuff.forward(100)
    cuff.right(90)
    cuff.forward(100)
    cuff.goto(0, 0)

    # Draw smaller, filled triangles with a fatter line
    cuff.pensize(3)
    cuff.pencolor('yellow')
    cuff.fillcolor('red')
```

```
    cuff.begin_fill()
    cuff.forward(50)
    cuff.right(90)
    cuff.forward(50)
    cuff.goto(0, 0)
    cuff.end_fill()

    cuff.begin_fill()
    cuff.forward(50)
    cuff.right(90)
    cuff.forward(50)
    cuff.goto(0, 0)
    cuff.end_fill()

    cuff.begin_fill()
    cuff.forward(50)
    cuff.right(90)
    cuff.forward(50)
    cuff.goto(0, 0)
    cuff.end_fill()

    cuff.begin_fill()
    cuff.forward(50)
    cuff.right(90)
    cuff.forward(50)
    cuff.goto(0, 0)
    cuff.end_fill()

    # we're done
    cuff.hideturtle()
    turtle.done()


main()
```

Output From Example