CS108L Computer Science for All
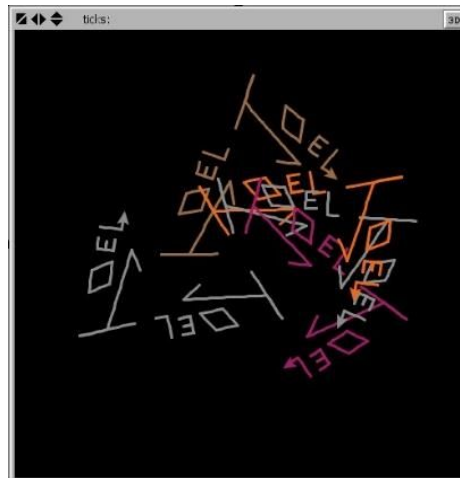## Module 1
Hello World: Your Name in Turtle Graphics

Incorporate your name or initials into a design for a 'brand' or 'logo'. This is your chance to be creative with Netlogo. Your logo should be visually appealing and capture something that is unique about you or something you care about. Include multiple shapes and colors in the design.

Each letter must be a different procedure. A procedure in NetLogo always begins with the **'to'** designator followed by the name of the procedure (names must not have any spaces and should give a clue on what a procedure will do) and ends with the **'end'** designator. Between these are all the commands the procedure will enact (this is sometimes called the body of the procedure).

To use a procedure you 'call' the procedure by stating its name. For example if you have a procedure called setup that calls the procedure 'make_an_i' might be something like this;

```
to setup
    clear-all

    create-turtle 1 [
        set heading 0
        pen-down
    ]

    make_an_i
end
```

```
to make_an_i
    ask turtle 0 [
        forward 4
        pen-up
        forward 1
        pen-down
        forward 0.2
        pen-up
        hide-turtle
    ]
end
```

Additionally, include the following 3 features in your logo at least once:

1. Change the color of the turtle's line as it moves!
    a. In Netlogo, colors can be represented as numbers. This means you can create a color gradient using simple mathematical operators (e.g., addition, subtraction, multiplication, etc.) and/or the "random" function. You can view the color dictionary here:
        https://ccl.northwestern.edu/netlogo/docs/programming.html#colors
    b. For example, let's say we made a turtle and asked it to **set color red**. Red corresponds to the number 15. To change its color to orange, we must add 10. We can ask the turtle to **set color (color + 10)**.
    c. For even more fun, use the **random** command. Try **set color (color + random 10)**, then try other values too!
2. Use the "sprout" command to spawn turtles so that part of the visual appeal of your logo is in the dynamics of multiple turtles drawing your logo. You can **ask patches** to **sprout** 1 or more turtles. Use these two commands to create a dynamic scene where parts of your logo are drawn either simultaneously or sequentially.
3. Use the repeat command to generate generate letters, lines, curves and/or shapes.
    a. The repeat command may be used to draw curve parts of a letter or you may use it to draw things like stars or other geometric figures.
    b. For example, on default world settings, the following draws a circle with turtle 0.

```
to make-circle
    ask turtle 0 [
        pen-down
        repeat 72 [
            forward 0.5
            left 5
        ]
    ]
end
```