WELCOME TO TECHNOVATION Week 3 - October 16



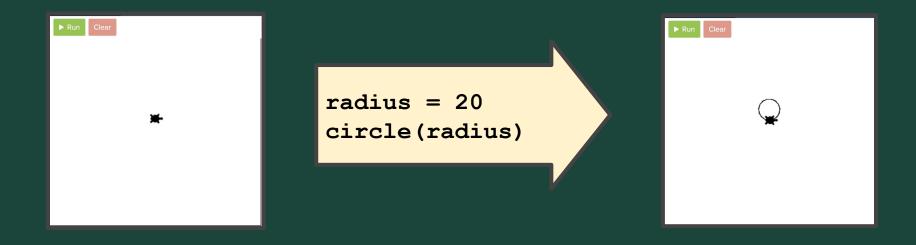
Agenda

- Introductions
- Icebreaker / Spotlight? (idk which to do)
- Lesson 2 Continued:
 - Variables
 - User Inputs
- Coding challenges
- Standup
- Temperature Check

Ice Breaker!

Tracy command: Assignment

name = value



More About Variables

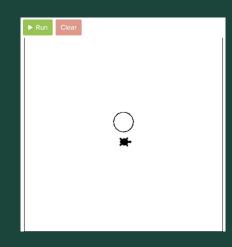
A variable is like a "box" for a "value" (number or text)



What's the Deal With Variables?



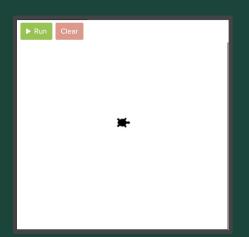
```
radius = 20
circle(radius)
penup()
setposition(0,-radius)
pendown()
```



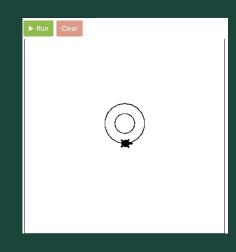
Variables let us set a value *once*, and then use that same value over and over!

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What's the Deal With Variables?



```
radius = 20
circle(radius)
penup()
setposition(0,-radius)
pendown()
radius = 2*radius
circle(radius)
```

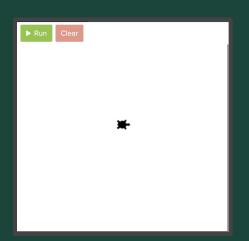


Variables let us set a value *once*, and then use that same value over and over!

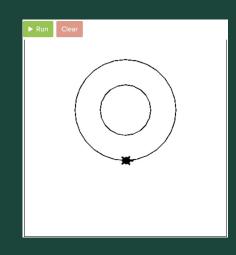
Variables can be modified to store different values over time!

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What's the Deal With Variables?



```
radius = 50
circle(radius)
penup()
setposition(0,-radius)
pendown()
radius = 2*radius
circle(radius)
```



Variables let us set a value *once*, and then use that same value over and over!

Variables can be modified to store different values over time!

Variables make it easier to read and modify code!

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Rules for Naming Variables

A Variable Name:

- Should start with a letter
- Consists of letters, numbers, and underscores ('_')
- Cannot be a Python "reserved word"
 (e.g., int, float, input, print, ...)
- Should be meaningful for example:

radius speed hair_color

User Input (Text)

Variables can also be used to save *user input*, letting the user indicate values on-the-fly while running programs!

Use assignment with the input ("prompt") function!

```
clr = input("Enter a color: ")
# if the user types "green"
color(clr)

clr = input("Enter a color: ")
# if the user types "blue"
color(clr)
"blue"
```

User Input (Numbers)

The user inputs a "string", or sequence of characters.

To use a user input as a number, you have to tell Python to convert it to an "int" or a "float" – use int(...) or float(...)

```
length

length = int(input("Enter an int: "))
# if the user types "200"
forward(length)
```

Command	What does it do?
<pre>color("color name")</pre>	Changes Tracy's trail color
pensize (number)	Changes Tracy's trail thickness
begin_fill()	Starts tracking closed shapes
end_fill()	Fills & stops tracking closed shapes
setposition(x, y)	Moves Tracy to the input coordinates
speed (number)	Sets how fast Tracy executes commands
name = value	Saves the value in the variable
<pre>input("prompt")</pre>	Prints prompt and waits for user input
int(), float()	Converts a value to a number (int or float)

Standup

- What is a challenge you faced today?
- What is something you were successful with?
- What do you want to improve on for next week?
- What are you most excited to learn?

Attendance and Temperature Check

Temperature Check