WELCOME TO

TECHNOVATION

Week 5 - October 29

MICHIGAN STATE UNIVERSITY

Agenda

- Icebreaker
- Spotlight
- Review:
  - Basics, Loops, Functions
- Lesson : User Input
- Coding Challenges
- Introducing Our Final Project
- Attendance and Temperature Check

Ice Breaker

Can you escape?

- Dog Escape

LET’S REVIEW FUNCTIONS!

Defining a Function

```
def function_name_here():
    function commands here (indented!)
```

Function Name: ~~my_function~~

Review: Drawing Basics

Command	What does it do?
`forward(distance)`	Moves Tracy forward a specified distance
`circle(radius)`	Tells Tracy to draw a circle with a specified radius
`backward(distance)`	Moves Tracy backward a specified distance
`penup()`	Stops Tracy from leaving a trail
`pendown()`	Has Tracy start drawing a trail

Defining a Function Cont.

```
11  # Draw two circles next to each other
12  for i in range (2):
13      pendown()
14      circle(50)
15      penup()
16      forward(100)
```

```
def function_name_here():
    function commands here
```


```
11  # Draw two circles next to each other
12  def draw_two_circles():
13      for i in range (2):
14          pendown()
15          circle(50)
16          penup()
17          forward(100)
```

Calling a Function

```
5  speed(5)
6
7  # This function draws two circles next to each other
8  def draw_two_circles():
9      for i in range (2):
10         pendown()
11         circle(50)
12         penup()
13         forward(100)
14
15 # Move to bottom left of circle group at position (-50,-100)
16 penup()
17 setposition(-50,-100)
18
19 draw_two_circles()
20
21 # Move to top of circle row at position (-50, 0)
22 setposition(-50,0)
23
24 draw_two_circles()
```

To call a function:

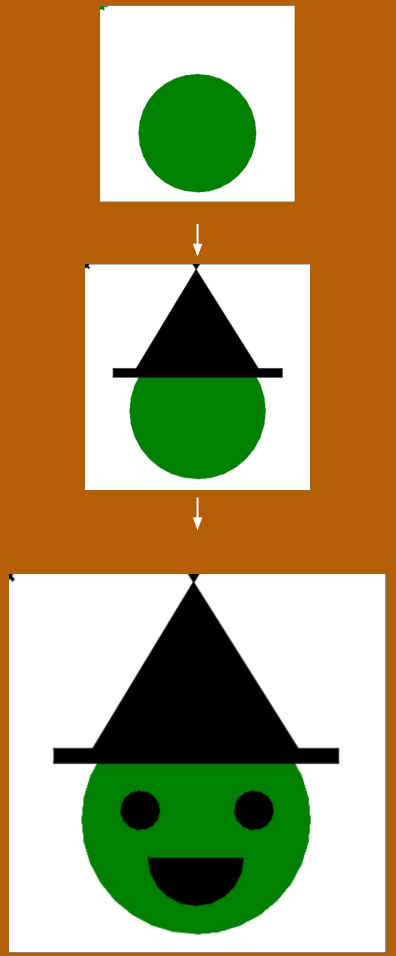
function_name()

*Reminder! Functions must be defined **before** they are called.

Code Along: Happy Witch!

Let’s get festive and carve a pumpkin with code!

- Lets go to the sandbox
- Define a **`draw_face()`** function
- Define a **`draw_hat()`** function
- Define a **`draw_eyes()`** function
- Define a **`draw_smile()`** function



Review: Drawing Basics

Command	What does it do?
`left(90)`	Turns Tracy 90 degrees to the left
`right(90)`	Turns Tracy 90 degrees to the right
`for i in range(number):`	Initialize a loop
`left(angle)`	Turns Tracy left at a specified angle
`right(angle)`	Turns Tracy right at a specified angle
`setposition(x, y)`	Moves Tracy to a specified coordinate
`speed(number 0-10)`	Determines how quickly Tracy will move through commands

Review: Drawing Basics

Command	What does it do?
`color("color_name")`	Changes Tracy's trail color
`pensize()`	Changes Tracy's trail thickness
`begin_fill()`	Starts filling in drawn shapes
`end_fill()`	Stops filling in drawn shapes
`circle(radius, extent,steps)`	Can control the radius, degree, and number of points of a circle
`def function_name():`	Declares a function
`function_name()`	Calls a function

Coding Time

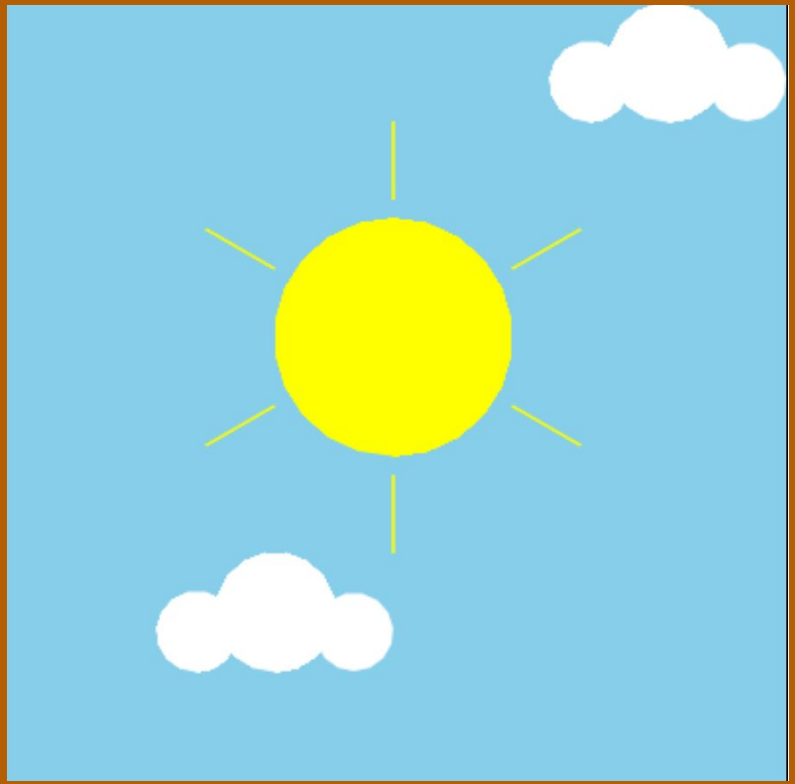
- Explore the weekly challenges in CodeHS!
  - You've learned everything you'll need to know to work through Week 6!
- Let's pair program!
  - Send the challenge exercise you're working on in the chat
  - Join a breakout room with someone working on the same exercise
  - Two brains are smarter than one!
  - Coding is a *team* sport: all major software companies hire *teams* of coders!
- Ask questions!
- Mentors will be available in conference rooms, and will pop in and out of pair programming rooms to check in!

Final Project: Overview

- The next three weeks:
  - Week 7: Brainstorm, Plan and Design. Submit our Final Project Outlines at the end of the meeting
  - Week 8: Code, Code, Code!
  - Week 9: Present our Final Projects
- Project requirements:
  - Must have so many shapes/colours, but this is a chance for you to have creative freedom
  - If you would like you may choose to work with a partner
  - Make sure you can finish it in time! You can also work on it at home or during Bonus Hours. If you finish early you are welcome to make a second project
- Ask questions!
  - Don’t be afraid to code outside the box! If there is something you don’t know how to do, let us know and we will help you add it
- Save your work!
  - It’s a great habit to constantly click that ‘Save’ button. Because we aren’t submitting it each time, CodeHS will not automatically save your work

Final Project: Brainstorm

- Examples
  - Here is Katie's Final Project so far!
  - Check out the code here
  - Here are more examples!
- Some more ideas
  - What are you passionate about?
  - Favorite place or animal?
  - Food
  - Cool geometric shapes or patterns
  - Try spelling out words



Standup

- What was an exercise you worked on today?
- What is something you were successful at?
- What was a challenge you had while coding?

Logistics: Attendance and Temperature Check

- Attendance
- Temperature Check