
Phidgets Friday

Getting Physical with CMU

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Students want....

creativity and **control...**

so give it to them...

CMU - CS Academy

1. Python + Graphics
2. Integrated LMS
3. Controlled online environment

Go further ...

[Desktop CMU Graphics](#)

[Physical Computing with Phidgets](#)

Phidgets

1. Simple connectivity - USB
2. Plug and Fun
3. No limits

Creative and Interactive !!

Classroom Experience

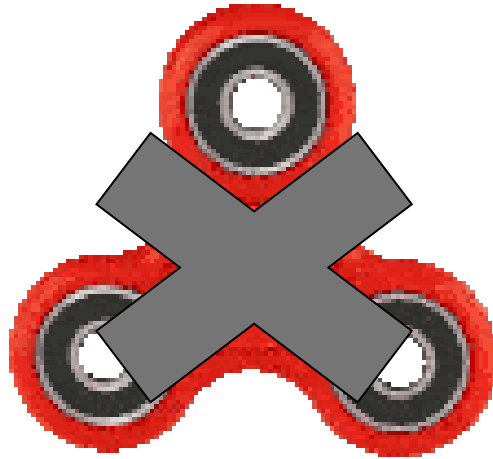
CMU - CS Academy

Grade 10 Introductory CS

- Riverdale CI, TDSB, Toronto, Ontario, CANADA
- 11 sections / 4 teachers / 250+ students
- Students complete 6 Units and 4 Creative Tasks
- Phidgets introduced as culminating option this year



What is a Phidget?

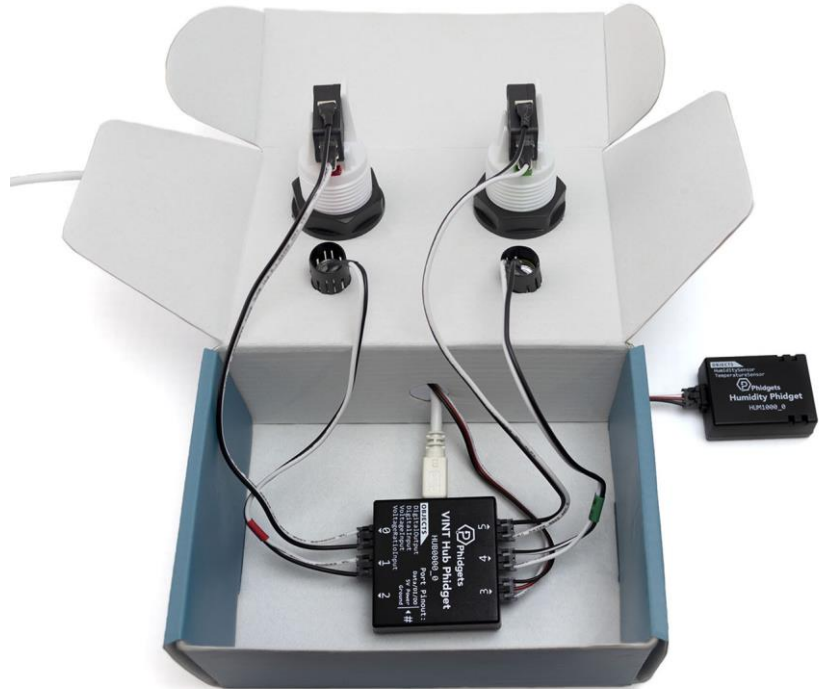


What is a Phidget?

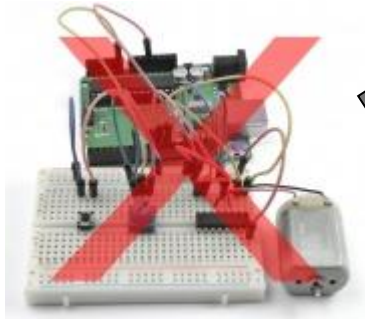
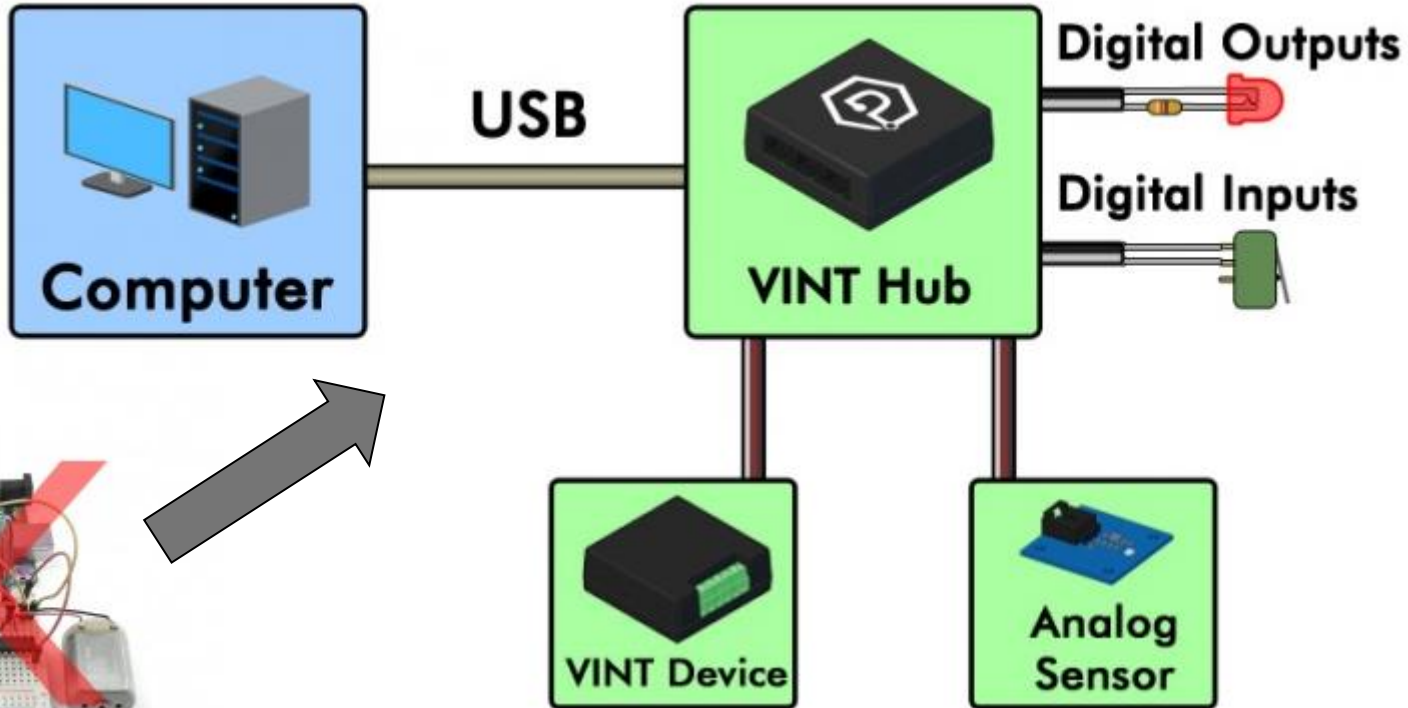


Getting Started Kit

- VINT Hub Phidget (6 devices)
- Humidity Phidget
- Push buttons (2)
- LEDs (2)
- all required cables



Phidget Architecture



Select your coding environment



LEVEL 

Scratch

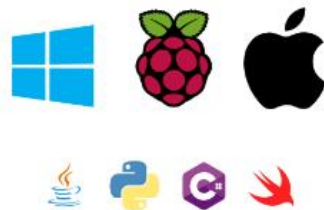
Beginner-friendly, block-based coding through your browser



LEVEL 

MakeCode

Intermediate, block-based and text-based coding through your browser

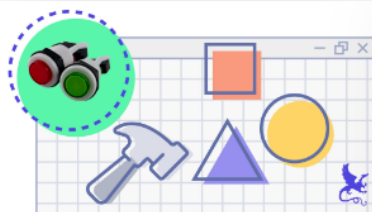


LEVEL 

Desktop

Advanced, text-based coding on your desktop environment of choice

Phidgets / CMU

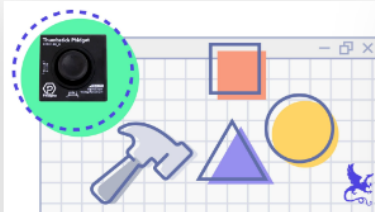


BEGINNER

Buttons

Learn how to use buttons with CMU Graphics

[Learn more](#)

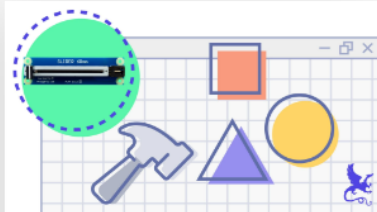


BEGINNER

Thumbstick Phidget

Learn how to use the Thumbstick Phidget with CMU Graphics

[Learn more](#)

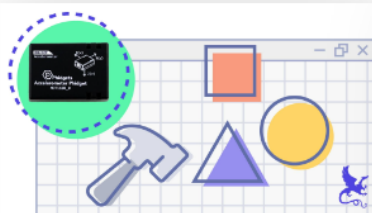


BEGINNER

Slider Phidget

Learn how to use the Slider Phidget with CMU Graphics

[Learn more](#)

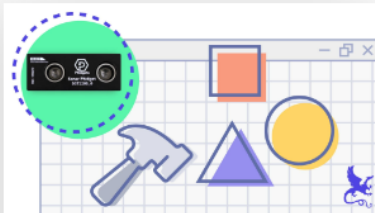


BEGINNER

Accelerometer Phidget

Learn how to use the Accelerometer Phidget with CMU Graphics

[Learn more](#)



BEGINNER

Distance Phidget

Learn how to use the Distance Phidget with CMU Graphics

[Learn more](#)

The Setup... Thonny IDE

1. Install Phidgets (platform)

- USB Driver + Control Panel

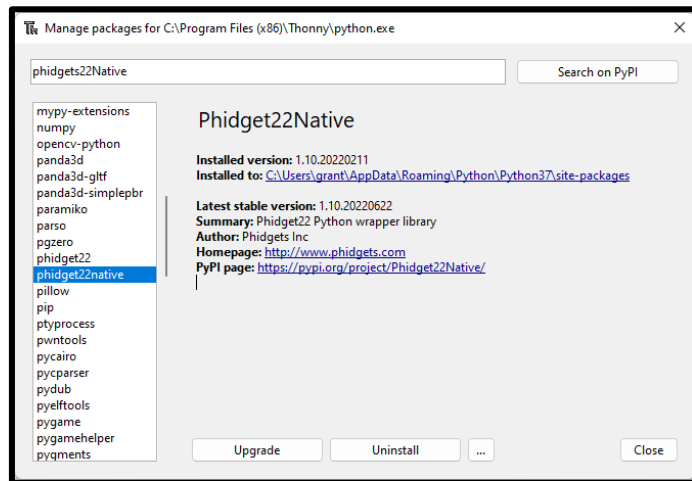
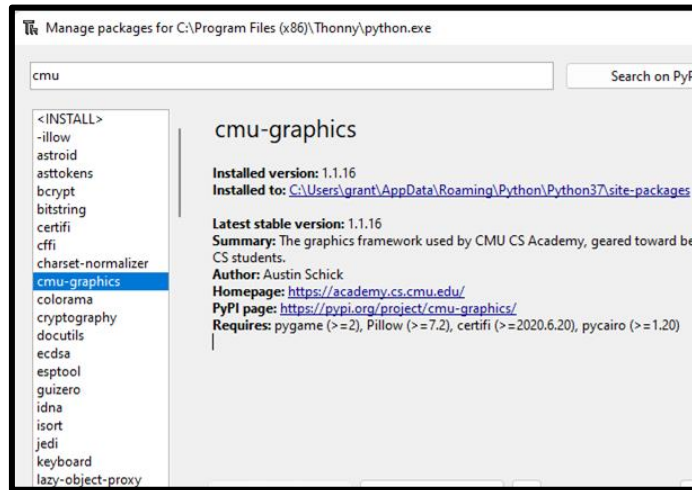
[https://www.phidgets.com/docs/OS - Windows](https://www.phidgets.com/docs/OS_-_Windows)

2. Install CMU desktop graphics

- PIP install

<https://pypi.org/project/cmu-graphics/>

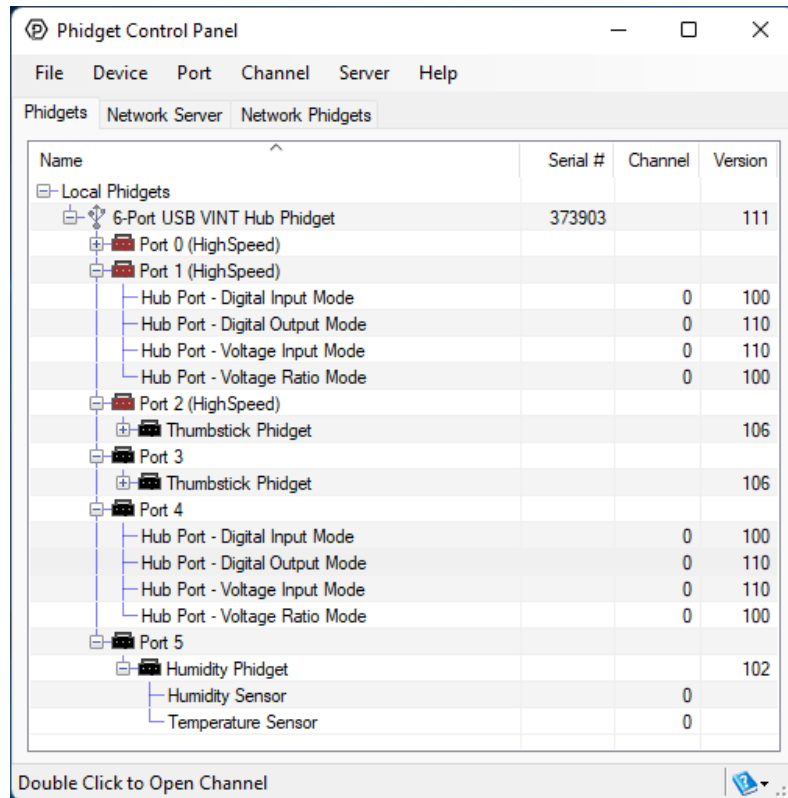
3. Install Phidgets - Python library



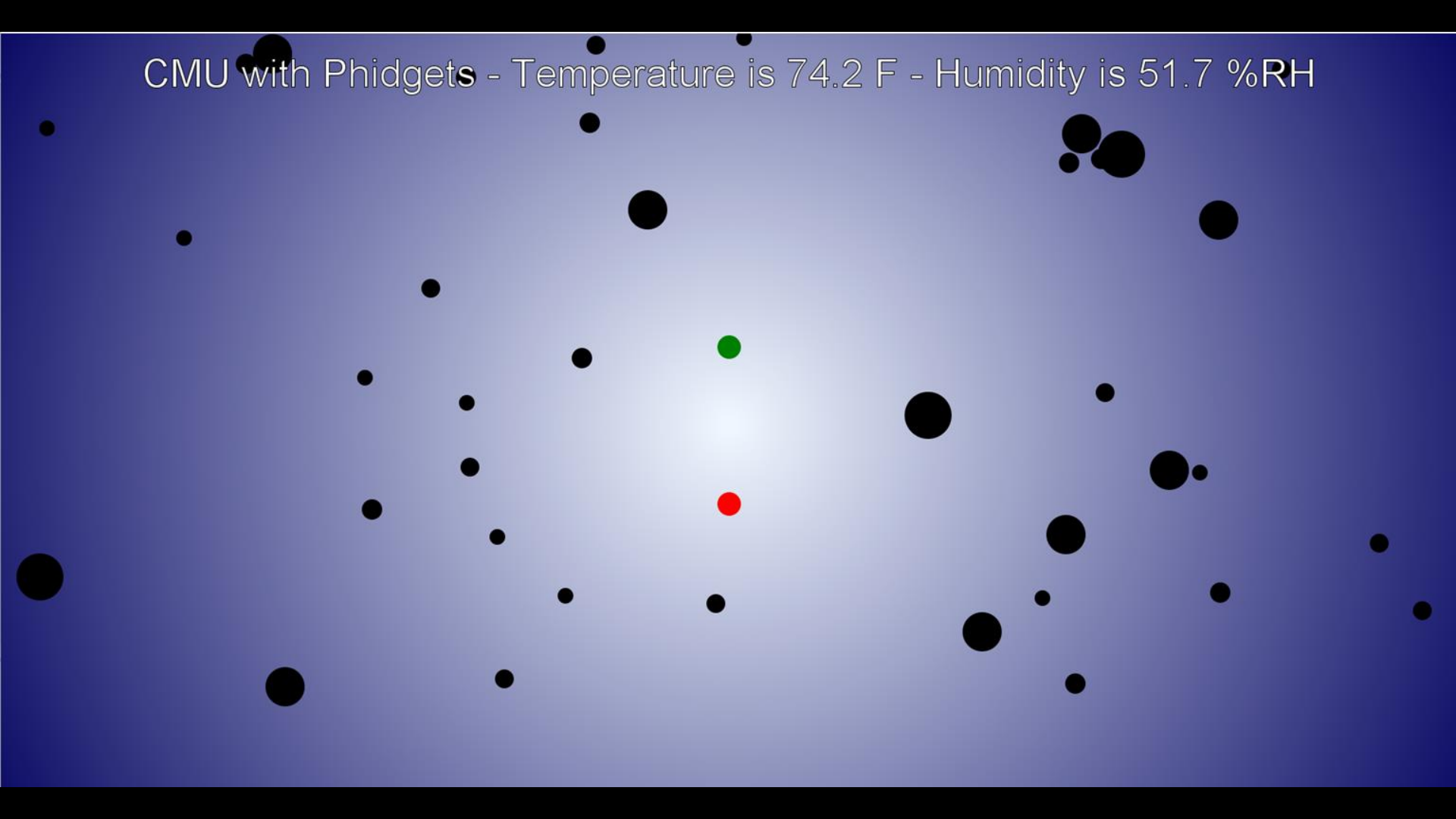
DEMO - 2 Player Game

Components

- **Getting Started Kit**
 - Red LED
 - Green LED
 - Humidity / Temp Sensor
- **2 Thumbstick Phidgets**
 - integrated buttons



CMU with Phidgets - Temperature is 74.2 F - Humidity is 51.7 %RH



CMU with Phidgets - Advice

CMU **onStep()** function to poll sensors.

Consider using Phidget event handlers - interrupt handling

- Explore the vast collection of Phidget devices
 - Distance Sensor
 - Light Sensor
 - Accelerometer
 - Motion Sensor
 - DC Power Source 5V - 500mA