



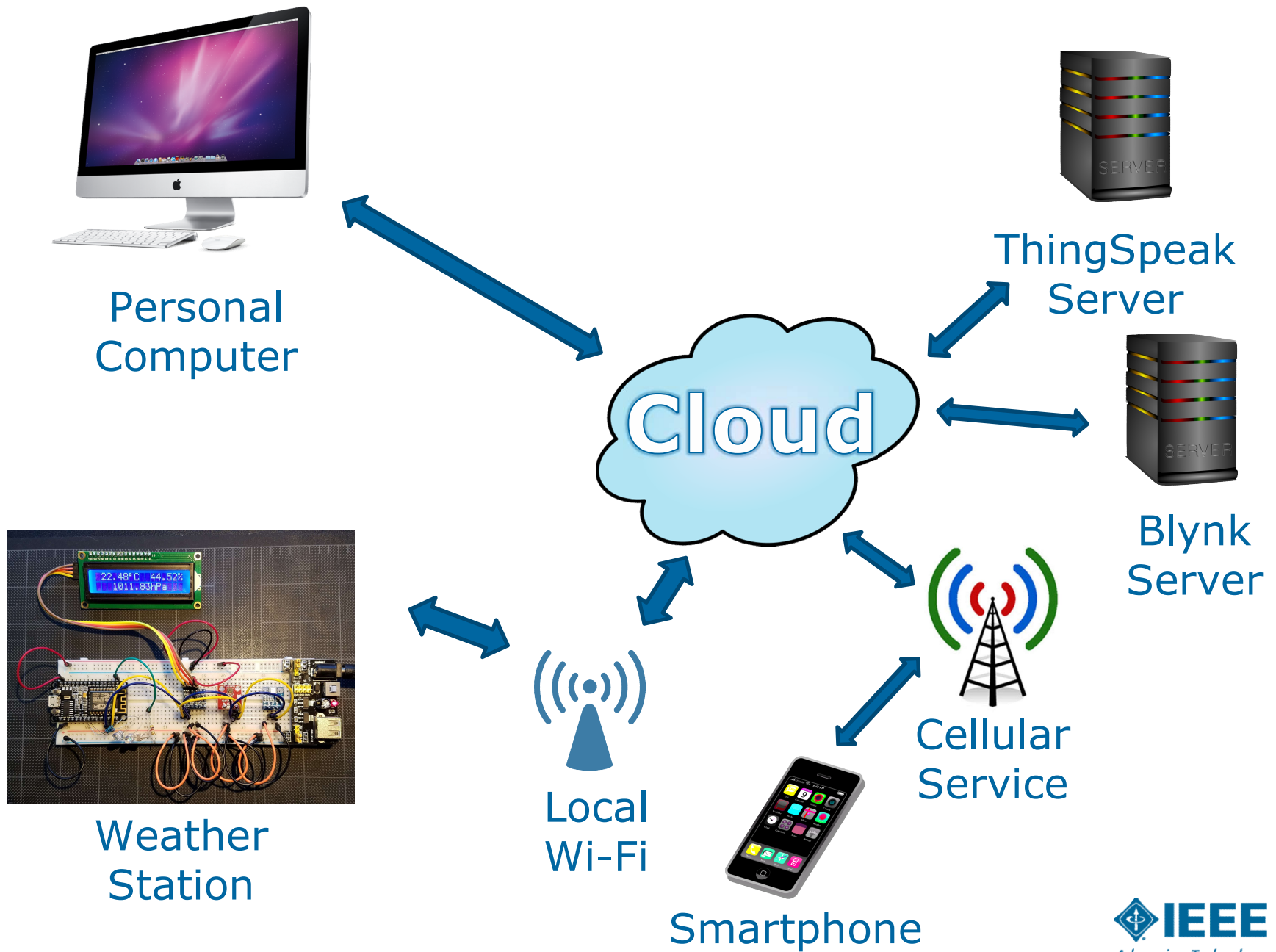
# Internet of Things Weather Station

IEEE Northern Virginia Section

Hands-On Professional Development Series

October 29, 2016 Montgomery College

## Sketch 05 – Smartphone Weather Station



# Prerequisites & Conditions

- ▶ You must have an iPhone or Android-based phone.
- ▶ You must have an App Store or Google Play account.
- ▶ You must be able to receive email on your phone or laptop.
- ▶ You may incur service charges from your cellular provider.
- ▶ You may chose to purchase additional features from Blynk.

# Blynk Account

1. On your phone's app store – search for and install Blynk app.
2. Create New Account (use an email address accessible on your phone)
3. Create New Project
  - Assign a Project Name
  - Select Hardware: NodeMCU
  - Email AUTH TOKEN to yourself

← Create New Project

IEEE IoT Weather

HARDWARE MODEL

NodeMCU

AUTH TOKEN

9eabf9170025439f99a2473490c565c9

Refresh E-mail

Create

# Blynk Configuration – Part 1

➤ Drag and drop widgets in this order:

1. LCD
2. Value Display M
3. Gauge
4. Button
5. Value Display S
6. Twitter
7. Graph or History Graph
8. Slider L



# Blynk Configuration - Part 2

- ▶ LCD
  - Mode: Advanced
  - Input: Virtual V0
  - Color: Amber
- ▶ Value Display M
  - Label: Humidity (%)
  - Input: Virtual V3
  - Color: Red
- ▶ Gauge
  - Label: Temperature (°F)
  - Input: Virtual V2 (-20 to 120)
  - Color: Blue
- ▶ Button
  - Label: Pod Bay Doors
  - Output: Digital D6
  - Mode: Switch
  - Labels: ON = Open
  - OFF = Closed
- ▶ Value Display S
  - Label: Voltage
  - Input: V6
- ▶ Slider L
  - Output: Digital D5 (0 – 1023)
  - Send On Release: ON

# Blynk Configuration - Part 3

- ▶ Graph
  - Label: Temperature ( $^{\circ}\text{C}$ )
  - Input: Virtual V5 (10 – 35)
  - Style: Line
- ▶ History Graph (additional cost suggested – 2,400 units for \$1.99)
  - Green – leave blank
  - Blue – Virtual V4 – Press (inHg)
  - Red – Virtual V2 – Temp ( $^{\circ}\text{F}$ )
  - Orange – Virtual V3 – Humidity (%)
  - Show Legend: On



# Blynk App Programming

1. Run Arduino IDE.
2. Add Blynk library:
  1. Sketch | Include Library | Manage Libraries...
  2. Search for Blynk
3. Open **IEEE\_IoT\_Sketch05\_Blynk\_V02**
4. Update WiFi at lines 53 & 54.
5. Update ThingSpeak API at line 57.
6. Cut and paste Blynk Authorization Token to line 61
7. Upload to NodeMCU.
8. Open Blynk app and run your project.