**Virtual Weather Forecaster Manual**

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**Introduction:**

This project is to build a virtual assistant that can do some basic communication and use sensors to collect outdoor data to predict current weather outside and do a “weather forecast”. An Azure ML model is built to predict the precipitation level based on temperature and humidity.

**How to Run:**

To run this project, certain Python modules need to be installed including “speech\_recognition”, “azure-iot-device”, “gtts”, “Play\_mp3” and other modules if needed.

1. Wire the Raspberry Pi as shown in the setup.
2. Download the Raspberry Pi codes into Raspberry Pi and save all scripts in the same folder.
3. Download the computer end codes and save them in one folder.
4. Run pushdata.py in Raspberry Pi and voice\_command.py on the computer.
5. Speak to the computer with the keyword “Alice”.
6. After the computer responds to “Alice”, give instructions to the computer. There are only 3 instructions right now: “How are you” which greets Alice; “How is today” which asks for weather forecast; “stop listening” which exit from the microphone but does not exit from subscribing data.

**Setup:**

The setup is connecting Raspberry Pi with a photoresistor and a DHT 11 temperature and humidity sensor in parallel. The connection is shown in the picture. Connection to DHT 11 follows “USE RASPBERRY PI WITH DHT11 TEMPERATURE AND HUMIDITY SENSOR” [1], and connection to photoresistor follows “How to make a Light Sensor Circuit using a Photoresistor and a Raspberry Pi”[2]

**图片包含 游戏机, 电路

描述已自动生成**

**Reference:**

[1] “USE RASPBERRY PI WITH DHT11 TEMPERATURE AND HUMIDITY SENSOR” URL: <https://www.circuitbasics.com/how-to-set-up-the-dht11-humidity-sensor-on-the-raspberry-pi/>

[2] “How to make a Light Sensor Circuit using a Photoresistor and a Raspberry Pi” URL: <https://www.youtube.com/watch?v=IOyYQ34C2y0>