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In [1]: # Make sure the base overlay is Loaded
from pynq.overlays.base import BaseOverlay
from pynq.lib import Pmod_IO
base = BaseOverlay("base.bit")
```

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In [2]: from pynq.lib.arduino import Arduino_Analog
from pynq.lib.arduino import ARDUINO_GROVE_A1
from pynq.lib.arduino import ARDUINO_GROVE_A2
from pynq.lib.arduino import ARDUINO_GROVE_A3
pmod_pin2 = Pmod_IO(base.PMODA, 2, 'out')
pmod_pin3 = Pmod_IO(base.PMODA, 3, 'out')
analog1 = Arduino_Analog(base.ARDUIAO,ARDUINO_GROVE_A1)
analog2 = Arduino_Analog(base.ARDUIAO,ARDUINO_GROVE_A2)
analog3 = Arduino_Analog(base.ARDUIAO,ARDUINO_GROVE_A3)
```

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In [3]: import requests
import random
import time

# Define the API URL for RTD sensor and joystick
url = "https://api.thingspeak.com/update"

# Define the API key
api_key = "ZWDDD7SRLM2MQYX3"
# Define the API URL for reading data
read_url = "https://api.thingspeak.com/channels/2453222/feeds/last.json?pi_key=ZWDDD7SRLM2MQYX3"
```

```
In [ ]: while True:
# Generate a random value between 0 and 3.3
field1_value = analog1.read() [0]
field2_value = analog2.read() [0]
field3_value = analog3.read() [0]
if field2_value > 1:
    pmod_pin3.write(1)
    pmod_pin2.write(0)
else:
    pmod_pin2.write(1)
    pmod_pin3.write(0)
# Create the payload
payload1 = {"api_key": api_key, "field1": field1_value}
payload2 = {"api_key": api_key, "field2": field2_value}
# Make the API request
response1 = requests.get(url, params=payload1)
time.sleep(1)
response2 = requests.get(url, params=payload2)

# Check if the request was successful
if response1.status_code == 200:
    print(f"Value {field1_value} was successfully written to field1.")
else:
    print(f"Error writing value to field1. Status code: {response1.status_code}")

if response2.status_code == 200:
    print(f"Value {field2_value} was successfully written to field2.")
else:
    print(f"Error writing value to field1. Status code: {response2.status_code}")

# Wait for 1 second
time.sleep(1)
```

Value 0.00823150634765625 was successfully written to field1.
Value 1.4269976806640625 was successfully written to field2.
Value 0.00863800048828125 was successfully written to field1.
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