PRACTICAL REPORT

For IoT Practical

JANUARY 1, 2022

DARSHAN RAMJIYANI (DSP)

DOCS, KSKV Kachchh University

4.10 – Serial Communication - Move the Mouse Cursor

Arduino to interact with an application on your computer by moving the mouse cursor. Perhaps you want to move the mouse position in response to Arduino information.

Arduino Code:

```
const int buttonPin = 2;
const int baudRate = 9600;
const int potXPin = 4;
const int potYPin = 5;

void setup()
{
        /* Setting pins for input. */
        pinMode(buttonPin, INPUT);
        digitalWrite(buttonPin, HIGH);

        /* Established Serial Communication. */
        Serial.begin(baudRate);

        /* Wait until Serial Communication not established. */
        while (!Serial)
        {
        }
        Serial.println("Connected.");
}

void loop()
{
        int x = (512 - analogRead(potXPin)) / 4;
        int y = (512 - analogRead(potYPin)) / 4;
        Serial.print("Data,");
```

```
        Serial.print(x, DEC);
        Serial.print(",");
        Serial.print(y, DEC);
        Serial.print(",");
        if (digitalRead(buttonPin) == LOW)
                Serial.print(1);
        else
                Serial.print(0);
        Serial.println(",");
        delay(50);
}
```

Python Code:

```
from time import sleep
import pyautogui
import serial
import sys

PORT: str = "com9"
BAUD_RATE: int = 9600
CONN: serial.Serial = None

pyautogui.FAILSAFE = False

def main():
    setup()
    while True:
        loop()


def setup():
    global BAUD_RATE, CONN, PORT
```

```
    print("[Python] : Connecting Dwaidh terminal to Arduino. Please wait...")
    while True:
        try:
            CONN = serial.Serial(PORT, BAUD_RATE)
            print(
                f"[Python] : Dwaidh terminal connected to the Arduino via
{PORT} at {BAUD_RATE} bps.")
            break
        except serial.SerialException as e:
            print(
                "[Python] : Can not connect to the port. Try again in 2
mininutes. ", e.args)
            from time import sleep
            sleep(2)

    while True:
        receive_data: str = CONN.readline().decode("ascii")
        if len(receive_data) > 0:
            if "Connected" in receive_data:
                print("[Python] : Arduino has successfully verify the
connection.")
                break
            else:
                print(f"[Arduino]: {receive_data}")
        continue


def loop():
    while True:
        receive_data: str = CONN.readline().decode("ascii")
        if len(receive_data) > 0:
            if "Data" in receive_data:
```

```
                x_coordinate = int(receive_data.split(",")[1])
                y_coordinate = int(receive_data.split(",")[2])
                print(f"[Python] : Moving mouse to
({x_coordinate},{y_coordinate})")
                sleep(1)
                try:
                    pyautogui.moveTo(x_coordinate, y_coordinate, 3,
pyautogui.easeInQuad)
                except KeyboardInterrupt as e:
                    sys.exit()
                sleep(5)
            else:
                print(f"[Arduino]: {receive_data}")
                sleep(5)


if __name__ == "__main__":
    main()
```

- Output: