PRACTICAL REPORT

For IoT Practical

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4.4 Serial Communication – Send Multiple text field in one message

Arduino Code:

```
int baudRate = 9600;

void setup()
{
      /* Established Serial Communication. */
      Serial.begin(baudRate);

      Serial.println("Connection Establishing connection...!");
      while(!Serial){}
      Serial.println("Connection Established!");

      /* Wait until Serial Communication not established. */
      while(!Serial){}

      /* Send data through Serial Communication. */
      Serial.println("- Name of Author : DSP -");
      Serial.println("------------------------------------------------------------");
}
void loop()
{
     int value1 = 10; // some hardcoded values to send
     int value2 = 100;
     int value3 = 1000;
     Serial.print('H'); // unique header to identify start of message
     Serial.print(",");
     Serial.print(value1,DEC);
     Serial.print(",");
     Serial.print(value2,DEC);
     Serial.print(",");
     Serial.print(value3,DEC);
     Serial.print(","); // note that a comma is sent after the last field
     Serial.println(); // send a cr/lf (End of message)
     delay(100);
}
```

- Processing Code:

```
import processing.serial.*;

Serial myPort;
char HEADER = 'H';
short LF = 10;
short portIndex = 3;

void setup()
{
  size(200, 200);
  println(Serial.list());
  println(" Connecting to -> " + Serial.list()[portIndex]);
  myPort = new Serial(this,Serial.list()[portIndex], 9600);
}

void draw() {}

void serialEvent(Serial p)
{
  String message = myPort.readStringUntil(LF);

  if(message != null)
  {
    print(message);

    String [] data = message.split(",");

    if(data[0].charAt(0) == HEADER && data.length > 3)
    {
      for( int i = 1; i < data.length-1; i++)
      {
        println("Value " + i + " = " + data[i]);
      }
      println();
    }
  }
}
```

Output:

```
COM3 COM4 COM5 COM7
 Connecting to -> COM7
Connection Establishing connection...!
Connection Established!
- Name of Author : DSP -
------------------------------------------------------------
H,10,100,1000,
Value 1 = 10
Value 2 = 100
Value 3 = 1000

H,10,100,1000,
Value 1 = 10
Value 2 = 100
Value 3 = 1000

H,10,100,1000,
Value 1 = 10
Value 2 = 100
Value 3 = 1000
```

OUTPUT FROM DWAIDH TERMINAL