DSM Lab Report

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Experiment Part A

Objective

1) To establish a bi-directional serial communication between two microcontrollers (Arduino)
2) To send and receive data (both string and numbers) between two microcontrollers.

Experiment setup/ procedure

Materials required:

2	Arduino Uno R3

Procedure:

Connect the transmission pin of one Arduino to the receiving pin of the other Arduino.

Code:

```
#define WRITE 0
#define READ 1

#define STRING 0
#define INT 1
int A = 10;
int check = WRITE;
int mode = INT;
char string[20] = "hello world";
void setup()
{
  Serial.begin(80);
```

```
}
void loop()
{
  if(check == WRITE)
  {
    if(mode == STRING)
      Serial.write(string,20);
    else
    {
      Serial.write("1");
    }
  }
  if(check == READ)
  {

      Serial.readBytes(string,20);
      Serial.write(string,20);



  }

}
```

Observations

The data transmitted by one Arduino is received by the other Arduino, when the configuration of the Arduinos is inverted (master becomes slave and vice-versa) the second Arduino transmits and the first Arduino receives. This is as expected. We are able to transmit both strings as well as integers.

Conclusion

Bi directional communication between Arduinos using UART ports was successfully established. We were able to send and receive integers as well as strings.

Tinkercad link with circuit

https://www.tinkercad.com/things/5ph2Ln5dVVB-brave-gaaris-snaget/editel?sharecode=dKJMAlLqdI8xBMYlnkFPhAuPRB2qmonvoynhH-6cJ4k