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Introduction To Microcontrollers Electronics – Lesson 7: PC Communication

FORMULAS

The following formulas and information are meant to go with the online lesson found here:
http://www.pyroelectro.com/edu/microcontrollers/pc_comm/

EXAMPLE ARDUINO PROGRAM

In Lesson 7 we learned about serial communication. To test out a serial link between a microcontroller and a laptop we made the microcontroller into a slave that would obey commands that the laptop sent to it.

The commands turned on unique LEDs and then turned them all off. the code for this experiment can be seen to the right in the Arduino IDE.

```
lesson7 | Arduino 1.0.2
File Edit Sketch Tools Help
lesson7 $
int number = 0;

void setup() {
  Serial.begin(9600); //Set Serial Module To 9600 BPS
  pinMode(10, OUTPUT); //Digital Pin 10 - Output
  pinMode(11, OUTPUT); //Digital Pin 11 - Output
  pinMode(12, OUTPUT); //Digital Pin 12 - Output
  pinMode(13, OUTPUT); //Digital Pin 13 - Output
}

void loop() {
  //If Serial Data Is Available Parse It
  if (Serial.available() > 0) {
    number = Serial.read(); //Read The Serial Data Byte

    if(number == '1') {
      digitalWrite(10, HIGH);
    }
    else if(number == '2') {
      digitalWrite(11, HIGH);
    }
    else if(number == '3') {
      digitalWrite(12, HIGH);
    }
    else if(number == '4') {
      digitalWrite(13, HIGH);
    }
    else if(number == '5') {
      digitalWrite(10, LOW);
      digitalWrite(11, LOW);
      digitalWrite(12, LOW);
      digitalWrite(13, LOW);
    }
  }
}
```

ADDITIONAL INFORMATION

If you have any questions about the formulas or information found in this document, please feel free to head on over to the forums and ask us some questions!

<http://www.pyroelectro.com/forums/viewforum.php?f=25>