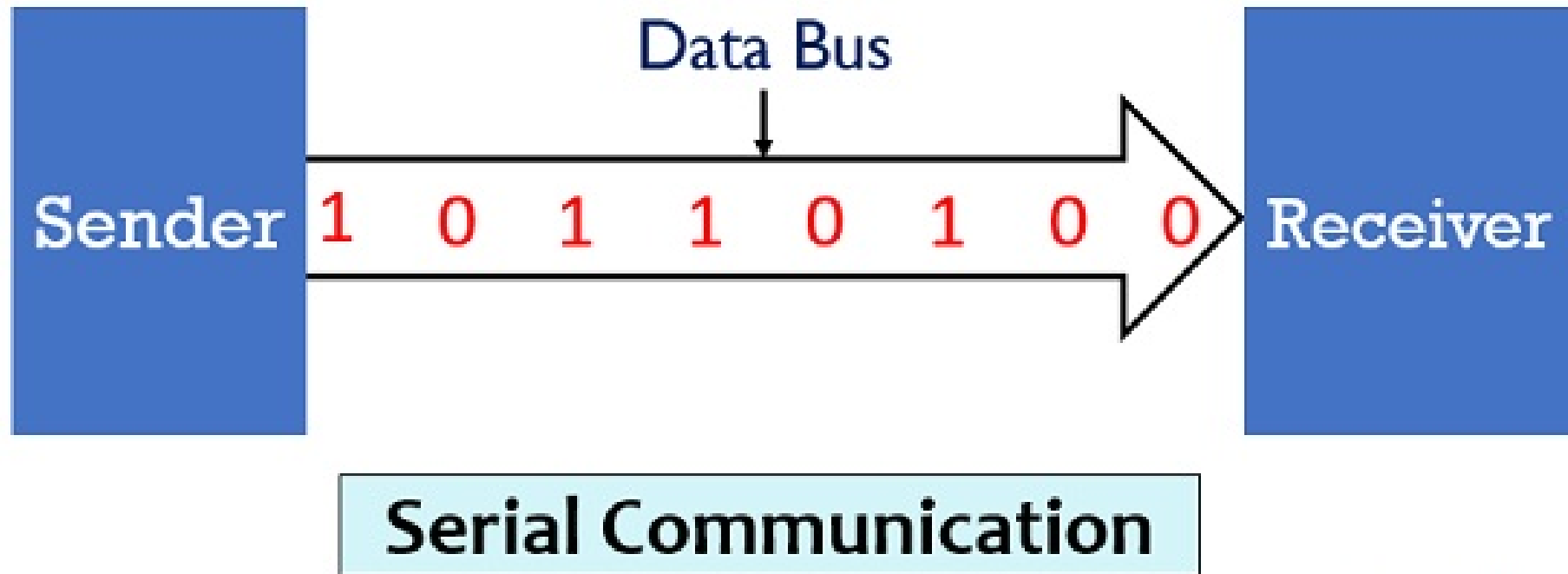


An Arduino Uno board is housed in a white plastic enclosure. A black battery pack is connected to the board's power pins. A breadboard with several components is connected to the board's digital pins. Various colored jumper wires are used to connect the components. The background is a dark grey surface with green borders at the top and bottom.

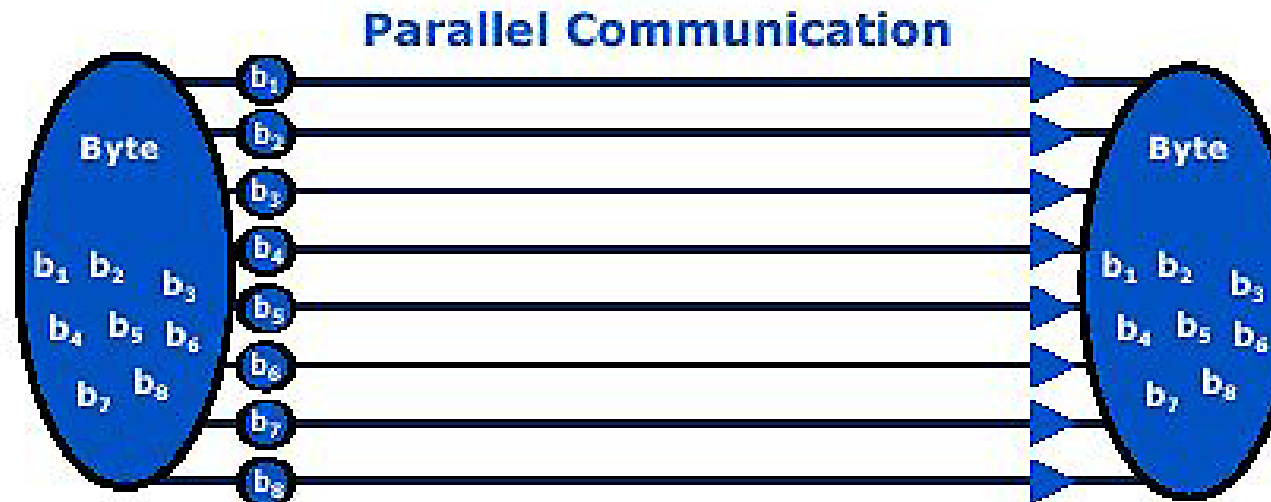
## Module 2-5

# SETTING UP THE ARDUINO IDE: Hello World

# What's So Great About Serial?



# Serial vs Parallel

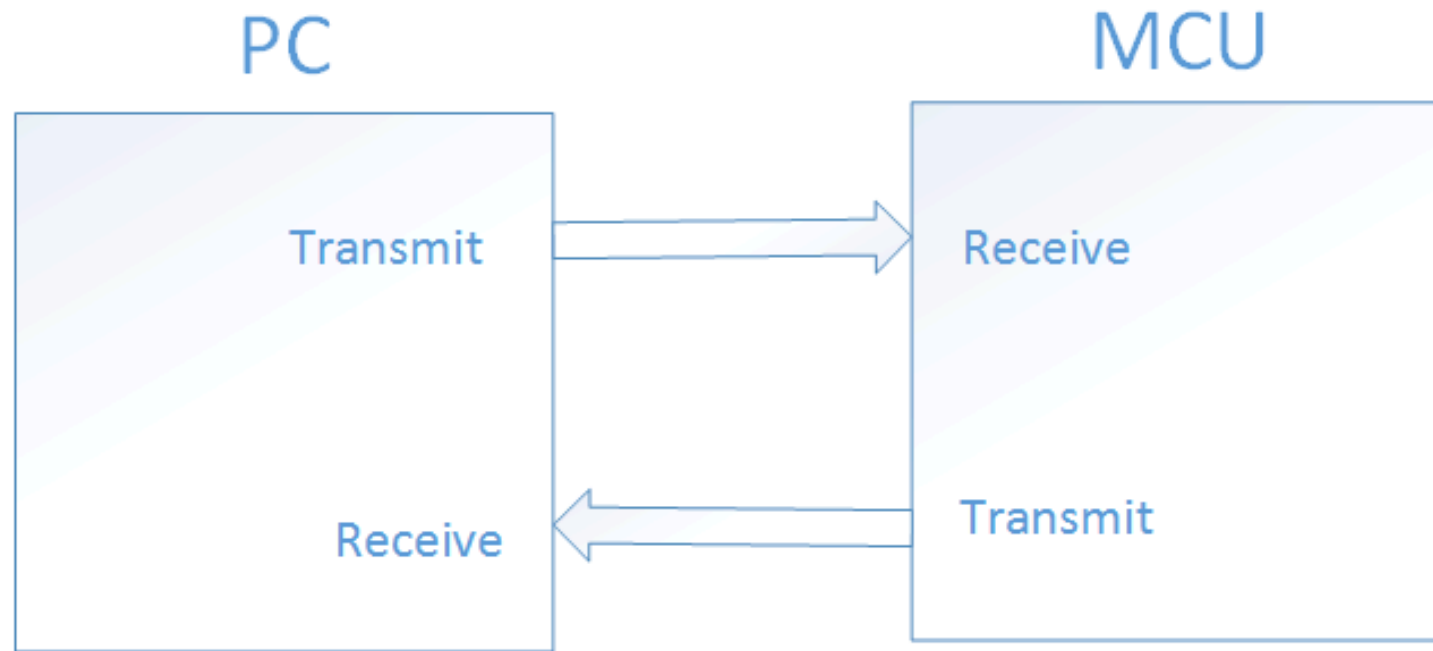


# Serial Communications in Embedded

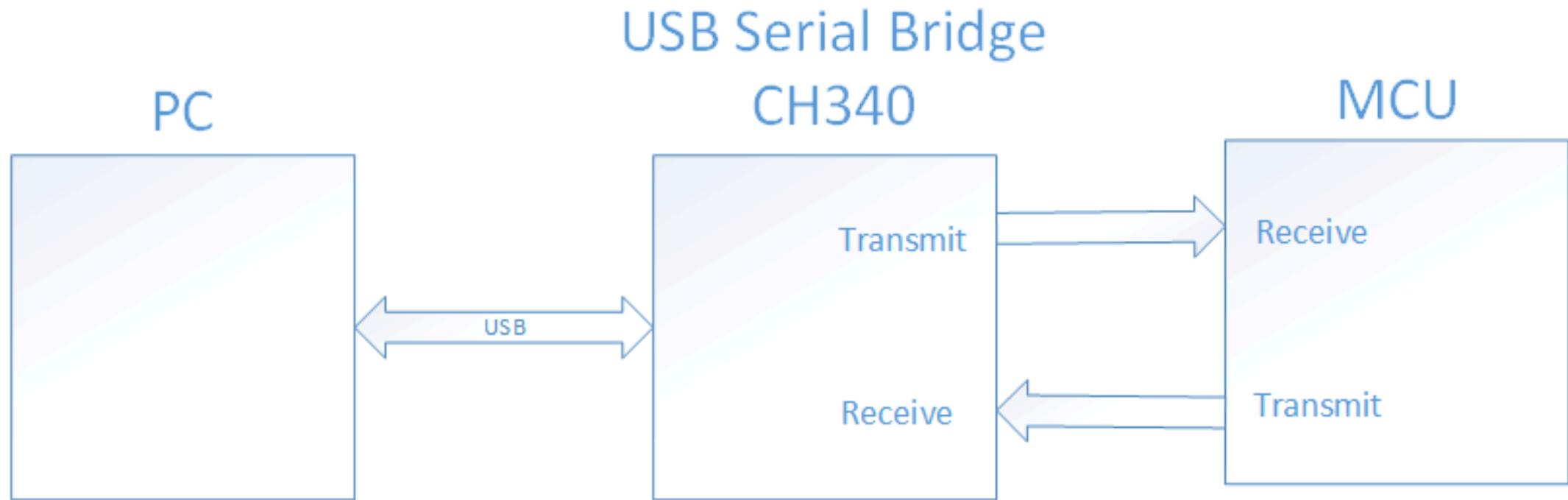


## Serial Communication Protocols

# PC Communications Before



# PC Communications Now



# Hello World

- Goal: Communicate with a PC by printing out “Hello World” on it
- Why do we care?
  - Very useful for software development
  - Can create GUI (Graphical User Interfaces) to communicate with device
  - Automation

# Hello World

- Functions:
  - **Serial.begin(baudrate)**
    - Initializes Serial port with given baudrate for communications between PC and board
  - **Serial.print(text)**
    - Prints the specified text to the serial console
  - **Serial.println(text)**
    - Prints the specified text to the serial console with a carriage return (newline)



```
void setup()  
{  
    Serial.begin(57600);  
    Serial.print("Hello Sketch v");  
    Serial.println("1.0");  
}
```

```
void loop()  
{  
    Serial.println("Hello World");  
    delay(1000);  
}
```

The background image shows a WildLogger module housed in a white plastic enclosure. The module's internal components, including a microcontroller board and various connectors, are visible. A black battery pack is connected to the module via red and black wires. Several other cables, including a blue ribbon cable and a multi-pin connector, are also attached to the module. The text is overlaid on this image.

**COMING UP**  
**Module 3**  
**Programming The WildLogger**