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Serial.print()

Description

Prints data to the serial port as human-readable ASCII text. This command can take many forms. Numbers are printed using an ASCII character for each digit. Floats are similarly printed as ASCII digits, defaulting to two decimal places. Bytes are sent as a single character. Characters and strings are sent as is. For example-

- Serial.print(78) gives "78"
- Serial.print(1.23456) gives "1.23"
- Serial.print('N') gives "N"
- Serial.print("Hello world.") gives "Hello world."

An optional second parameter specifies the base (format) to use; permitted values BIN(binary, or base 2), OCT(octal, or base 8), DEC(decimal, or base 10), HEX(hexadecimal, or base 16). For floating point numbers, this parameter specifies number of decimal places to use. For example-

- Serial.print(78, BIN) gives "1001110"
- Serial.print(78, OCT) gives "116"
- Serial.print(78, DEC) gives "78"
- Serial.print(78, HEX) gives "4E"
- Serial.print(1.23456, 0) gives "1"
- Serial.print(1.23456, 2) gives "1.23"
- Serial.print(1.23456, 4) gives "1.2345"

You can pass flash-memory based strings to Serial.print() by wrapping them with For example:

Serial.print(F("Hello World"))

To send data without conversion to its representation as characters, use Serial.writ

Syntax

Serial.print(val) Serial.print(val, format)

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Serial main page.

val: the value to print. Allowed data types: any data type.

Returns

print() returns the number of bytes written, though reading that number is option
Data type: size_t.

Example Code

```
Uses a for loop to print numbers in various formats.
void setup() {
  Serial.begin(9600); // open the serial port at 9600 bps:
void loop() {
  // print labels
  Serial.print("NO FORMAT"); // prints a label
 Serial.print("\t");
                               // prints a tab
  Serial.print("DEC");
 Serial.print("\t");
  Serial.print("HEX");
  Serial.print("\t");
  Serial.print("OCT");
  Serial.print("\t");
  Serial.print("BIN");
 Serial.println();
                           // carriage return after the last label
  for (int x = 0; x < 64; x++) { // only part of the ASCII chart, change to suit
    // print it out in many formats:
                           // print as an ASCII-encoded decimal - same as "DEC"
    Serial.print(x);
    Serial.print("\t\t"); // prints two tabs to accomodate the label lenght
    Serial.print(x, DEC); // print as an ASCII-encoded decimal
    Serial.print("\t");
                           // prints a tab
    Serial.print(x, HEX); \hspace{0.1cm} // \hspace{0.1cm} print as an ASCII-encoded hexadecimal
    Serial.print("\t");
                           // prints a tab
    Serial.print(x, OCT); // print as an ASCII-encoded octal
    Serial.print("\t");
                           // prints a tab
    Serial.println(x, BIN); // print as an ASCII-encoded binary
    // then adds the carriage return with "println"
                           // delay 200 milliseconds
    delay(200);
  Serial.println();
                           // prints another carriage return
}
```

Notes and Warnings

For information on the asyncronicity of <code>Serial.print()</code>, see the Notes and Warnings section of the <code>Serial.write()</code> reference page.

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