Internet Of Things

EEPROM

Memorizing data
and sleep tight

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EEPROM

electrically erasable programmable read-only memory

- Arduino/Genuino boards has EEPROM: 8 bits memory whose values are kept when the board is turned off (like a tiny hard drive). The library enables you to read & write those bytes.

- Arduino boards' amounts of EEPROM:
  - 1024 bytes on the ATmega328,
  - 512 bytes on the ATmega168 and ATmega8,
  - 4 KB on the ATmega1280 & ATmega2560,
  - 1024 bytes on the Arduino/Genuino 101.

- Value that can be written per slot: 0-255

  → $2^8 = 256$

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A little note

A single bit is either a 0 or a 1

8 bits = 1 Byte

1 KB = 1024 Bytes = 8192 bits

1024 KB = 1048576 bytes = 1 MB

1024 MB = 1 GB

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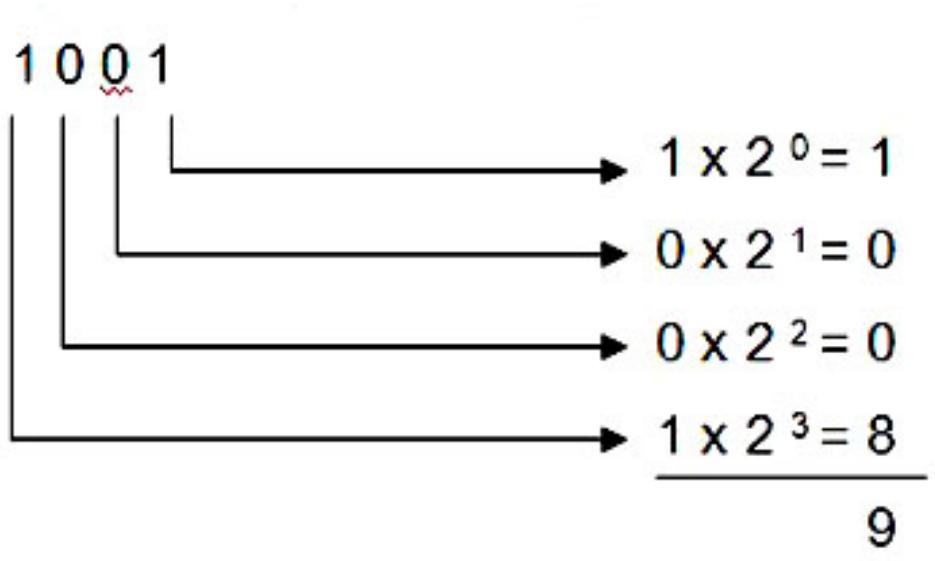
8 bit binary to decimal conversion



0	0000 0000
1	0000 0001
2	0000 0010
3	0000 0011
4	0000 0100
5	0000 0101
6	0000 0110
7	0000 0111
8	0000 1000
9	0000 1001
10	0000 1010

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EEPROM “Slot” *where it saves data*

EEPROM on Arduino

```
1. #include <EEPROM.h>
2. EEPROM.write(address, value)
3. EEPROM.read(address)
```

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EEPROM Read All Slots

```
#include <EEPROM.h>
int slot = 0; int nilai;

void setup() {Serial.begin(9600);}

void loop() {
  nilai = EEPROM.read(slot);
  Serial.print("Slot ");
  Serial.print(slot);
  Serial.print(" = ");
  Serial.println(nilai);
  slot = slot + 1;
  if (slot==EEPROM.length()){slot = 0;}
  delay(10);}
```

EEPROM Write All Slots

```
#include <EEPROM.h>

void setup() {
Serial.begin(9600);
for (int i=0; i<EEPROM.length(); i++) {
    EEPROM.write(i, 0);
  }
Serial.print("Proses write selesai!");
}

void loop() {
}
```

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EEPROM Write

```
#include <EEPROM.h>
int slot = 10;
int nilai = 255;

void setup() {
  EEPROM.write(slot, nilai);
  delay(100);
}

void loop() {
}
```

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EEPROM Read

```
#include <EEPROM.h>
int slot = 10;
int nilai;

void setup() {
  Serial.begin(9600);}

void loop() {
  nilai = EEPROM.read(slot);
  Serial.print(“Slot ");
  Serial.print(slot);
  Serial.print(“ = ");
  Serial.print(nilai);
  delay(1000);}
```

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