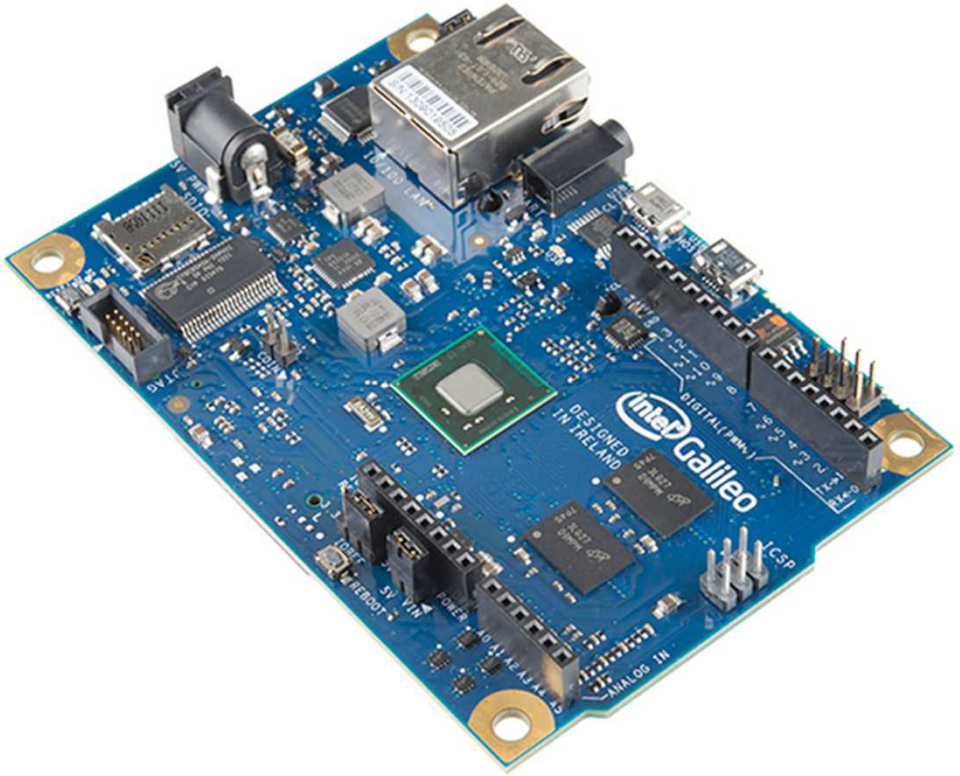
# Arquitetura II

## Galileo: Hardware e Ambiente de desenvolvimento

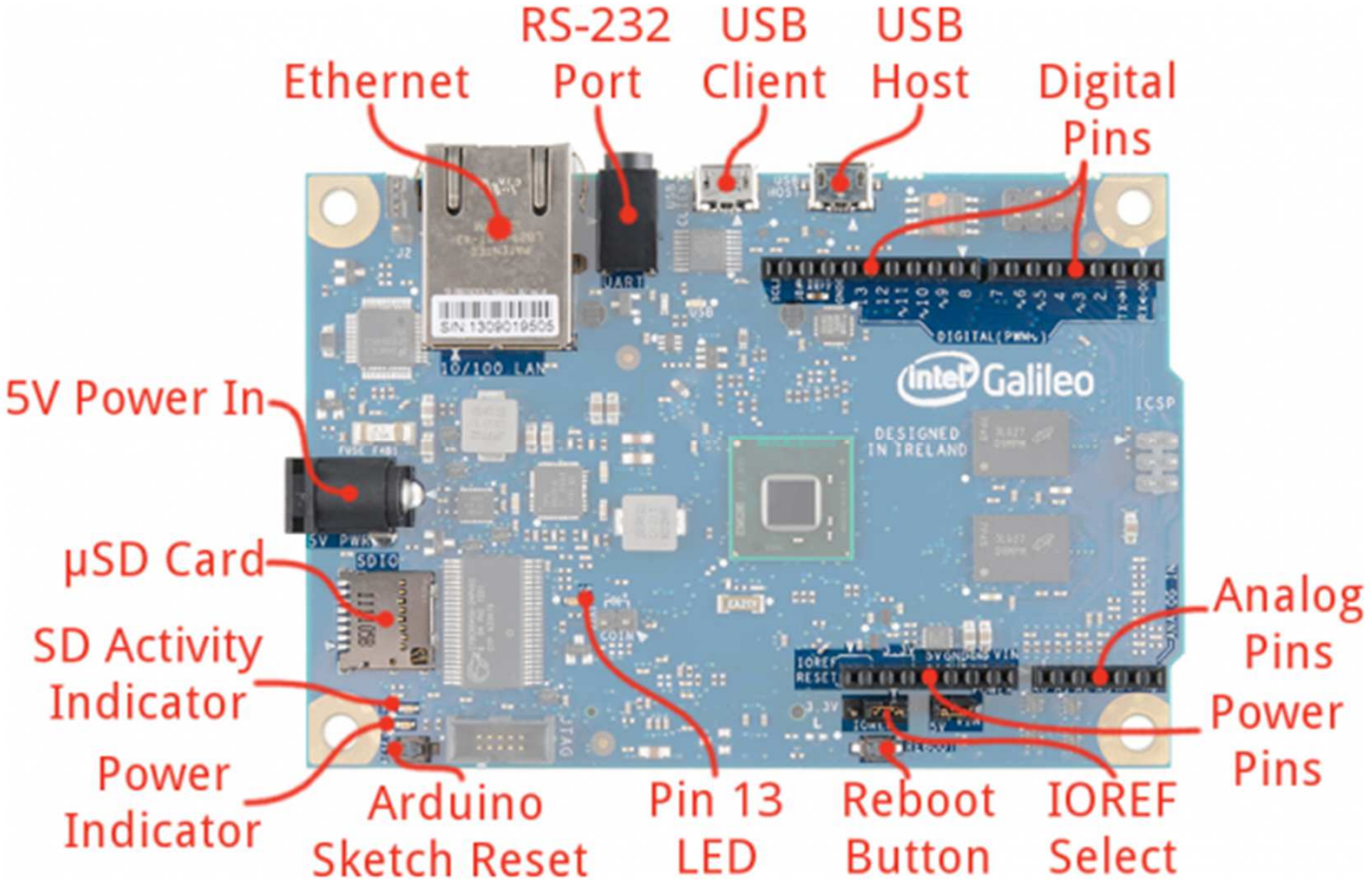
# Galileo:  Hardware e Ambiente de desenvolvimento

SOC Intel Quark

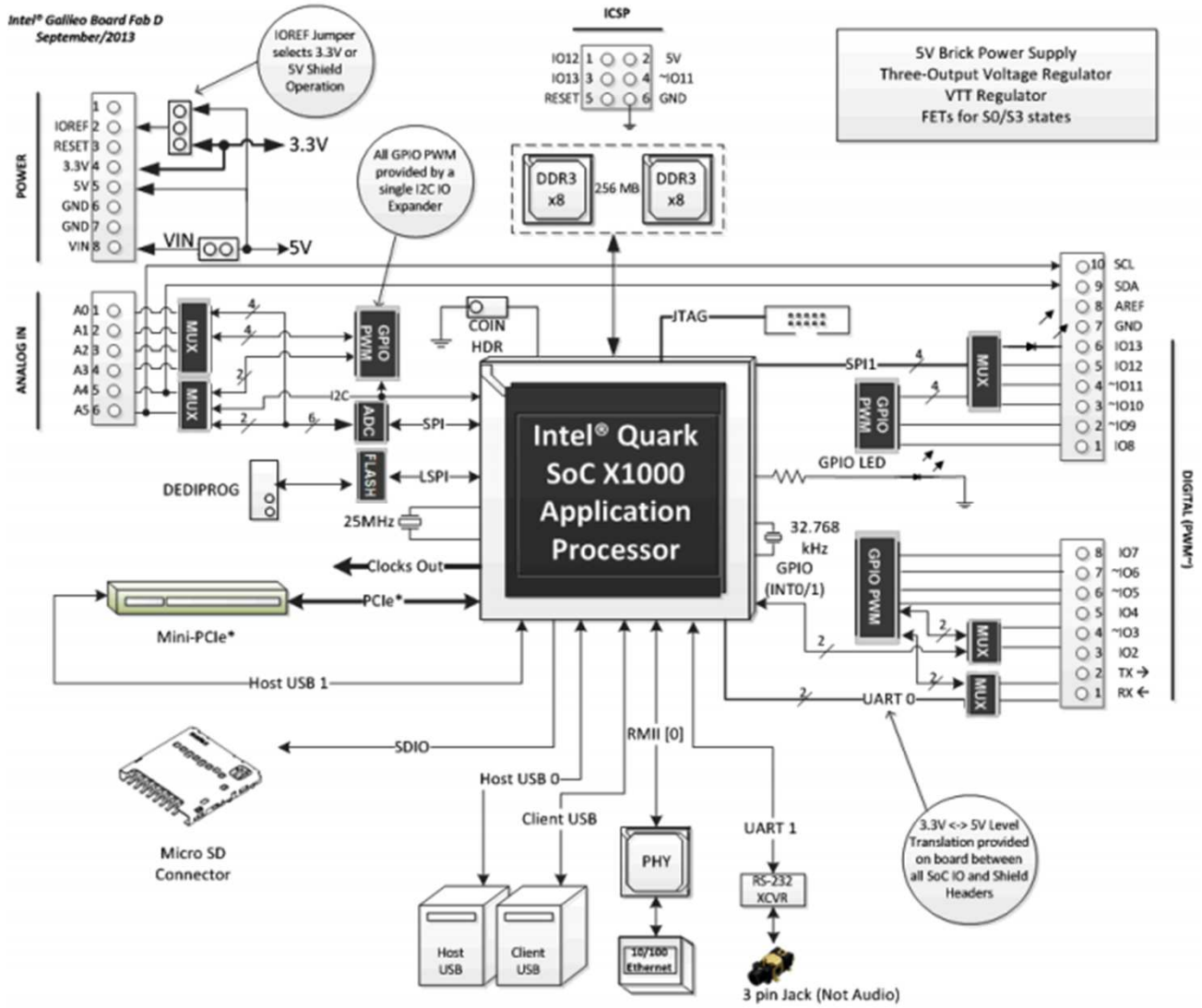


# Galileo:  Hardware e Ambiente de desenvolvimento

Localização componentes do hardware

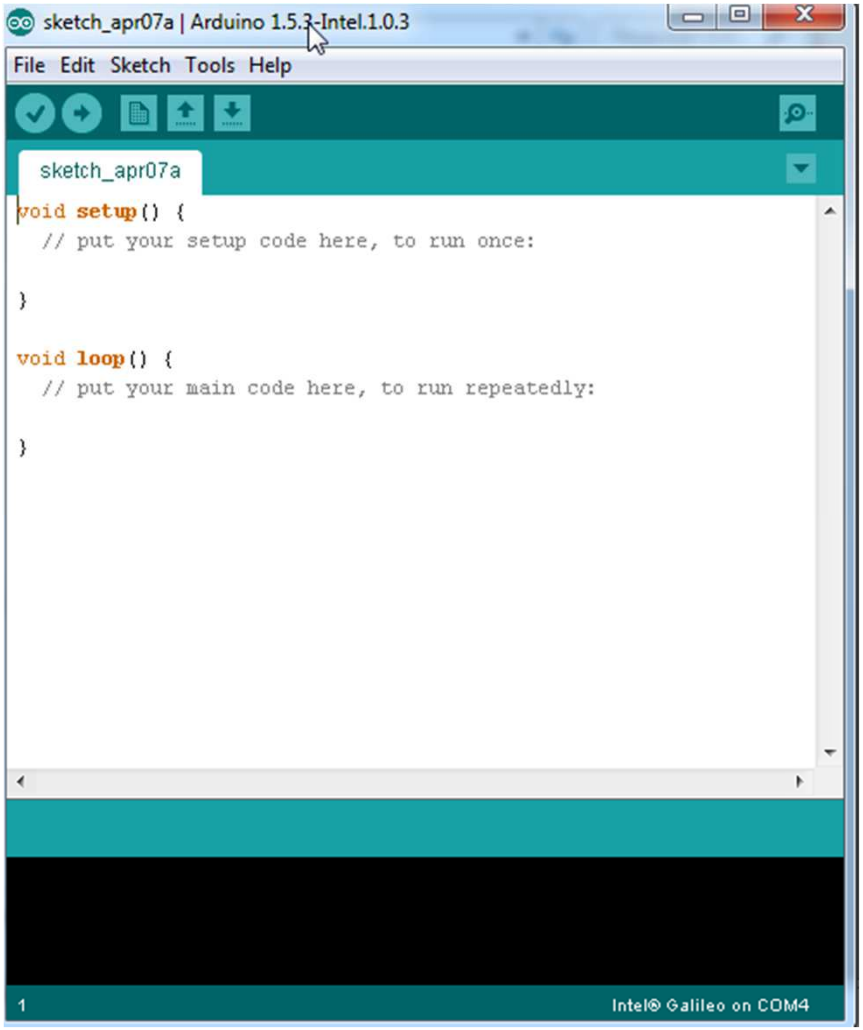


# Galileo: Hardware e Ambiente de desenvolvimento



# Galileo:  Hardware e Ambiente de desenvolvimento

## Ambiente de desenvolvimento Arduino



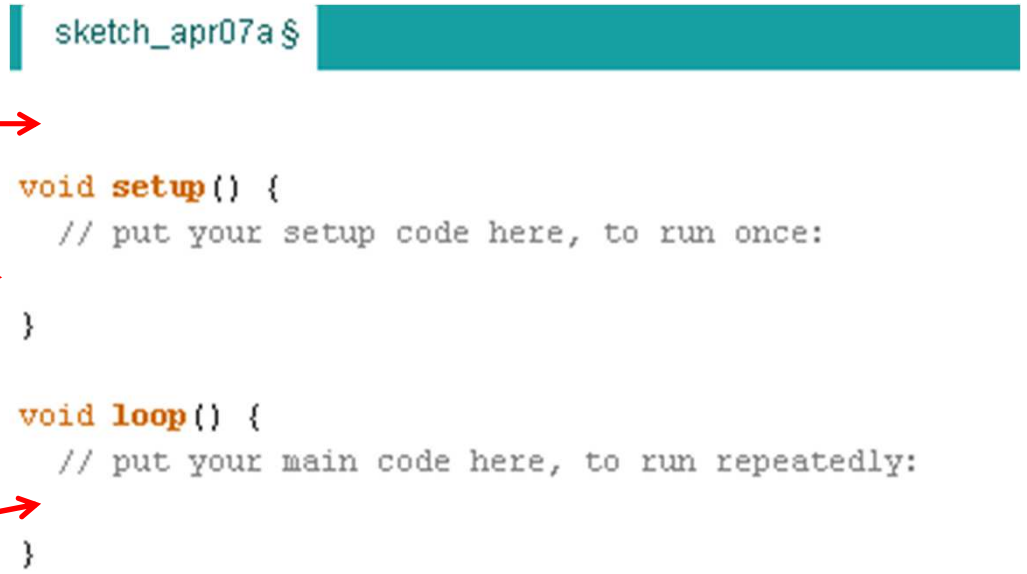
# Galileo:  Hardware e Ambiente de desenvolvimento

Estrutura de projeto/código

Declaração de objetos globais

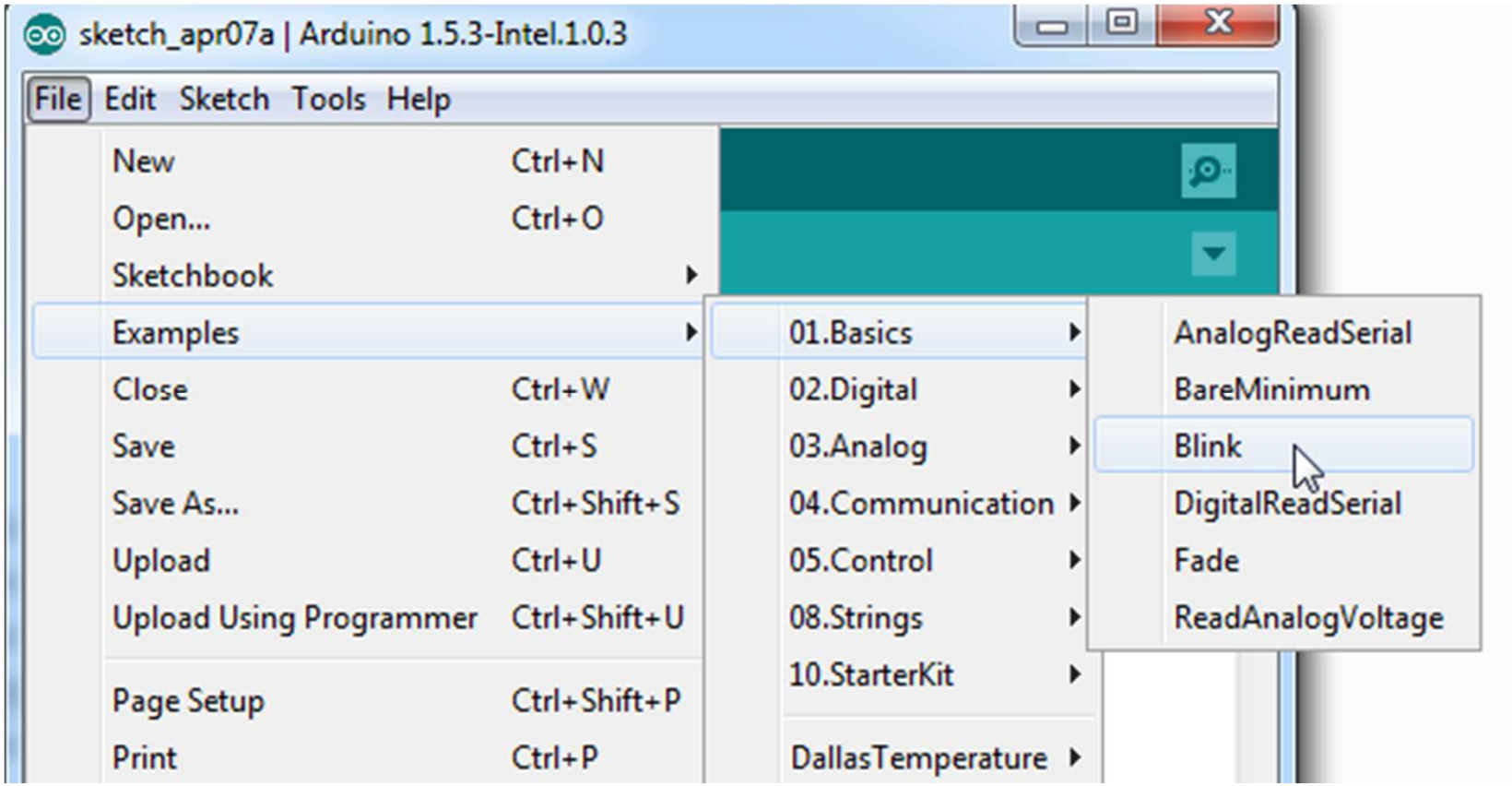
Configuração e atribuições iniciais. ( executa uma vez no início)

Aplicação executada em laço infinito



# Galileo:  Hardware e Ambiente de desenvolvimento

Aplicação 01 – “Hello World”



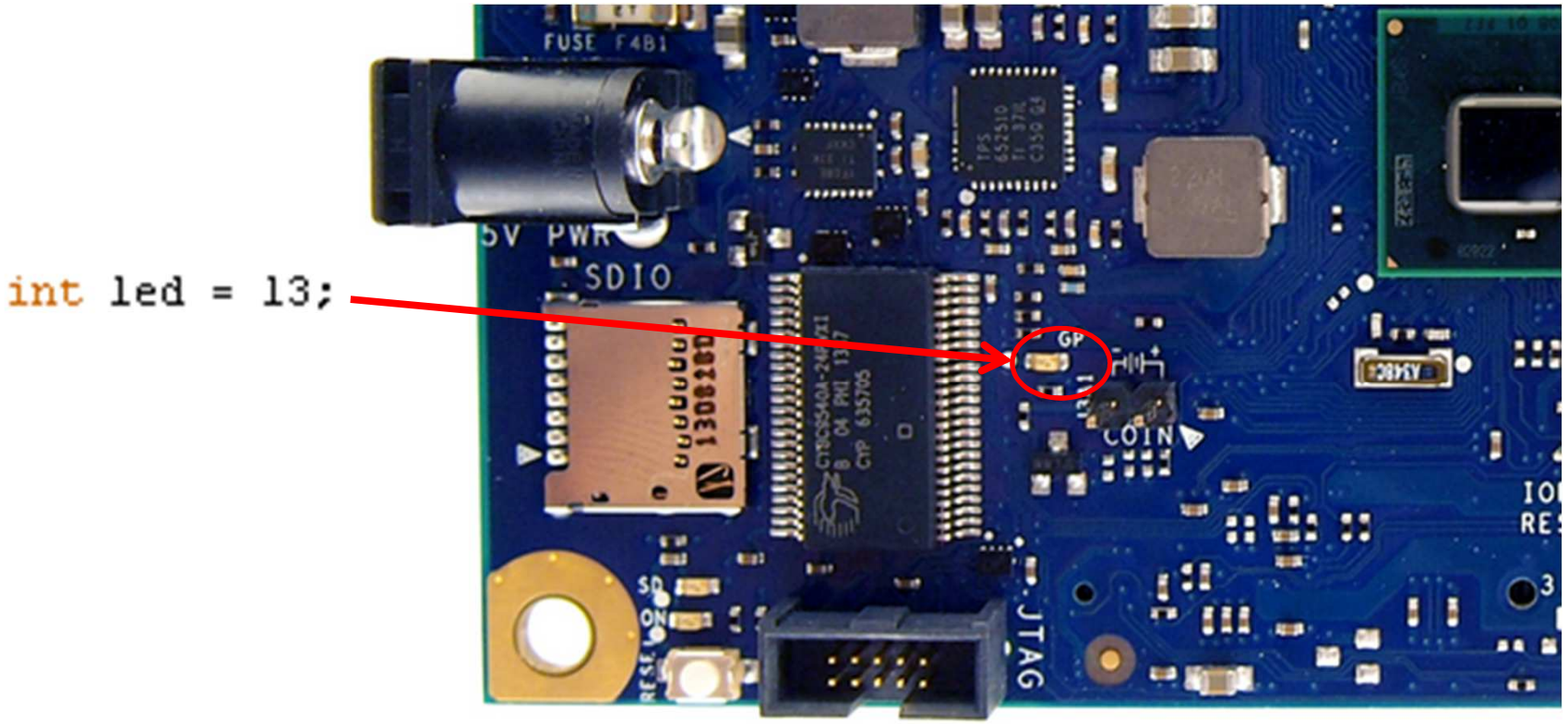
# Galileo:  Hardware e Ambiente de desenvolvimento

Aplicação 01 – “Hello World”

```
// Pin 13 has an LED connected on most Arduino boards.
// give it a name:
int led = 13;

// the setup routine runs once when you press reset:
void setup() {
  // initialize the digital pin as an output.
  pinMode(led, OUTPUT);
}

// the loop routine runs over and over again forever:
void loop() {
  digitalWrite(led, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(1000);               // wait for a second
  digitalWrite(led, LOW);    // turn the LED off by making the voltage LOW
  delay(1000);               // wait for a second
}
```

# Galileo:  Hardware e Ambiente de desenvolvimento

Aplicação 01 – “Hello World”

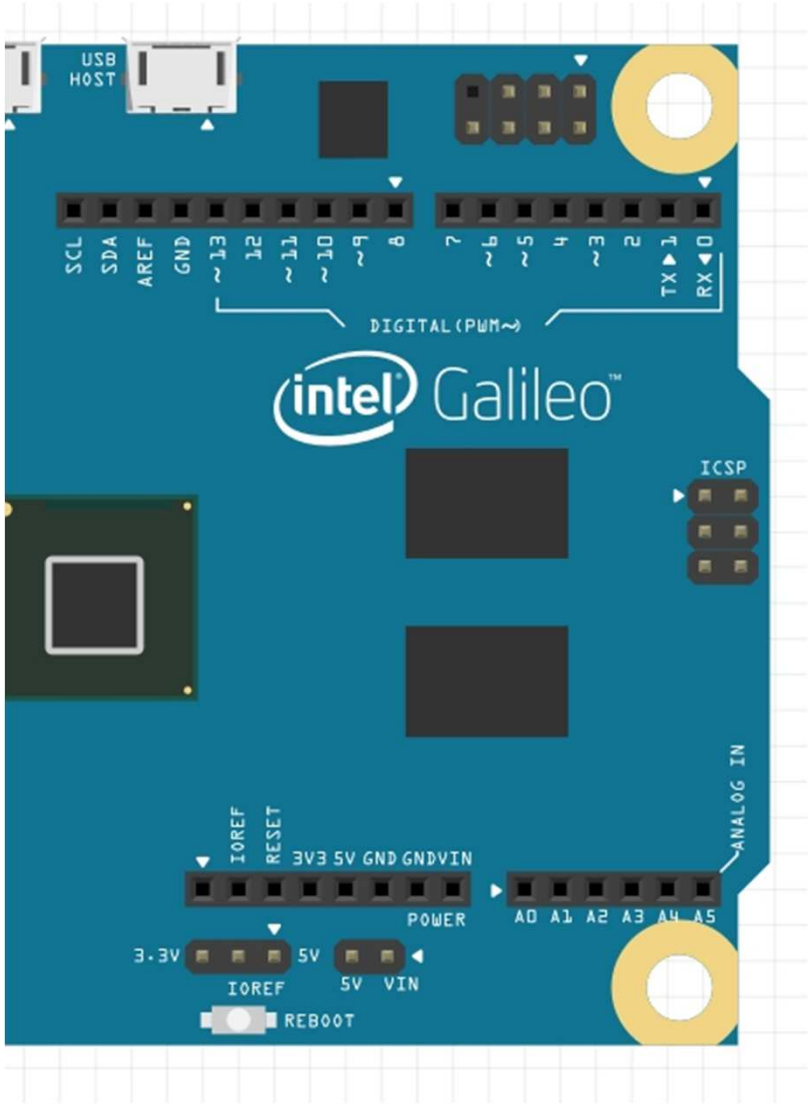



```
int led = 13;
```

```
pinMode(led, OUTPUT);
```

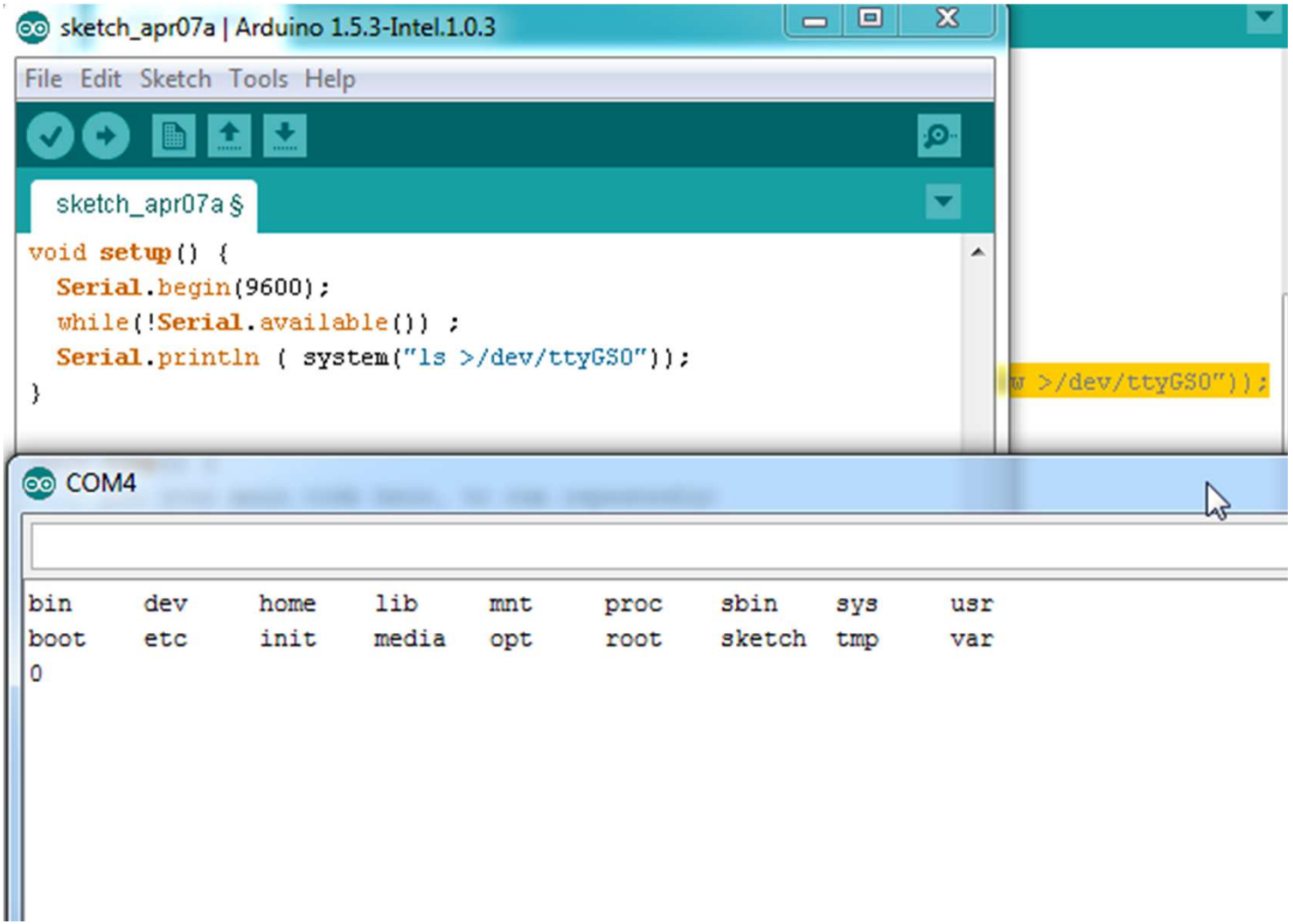
# Galileo:  Hardware e Ambiente de desenvolvimento

Entradas e Saídas



# Galileo:  Hardware e Ambiente de desenvolvimento

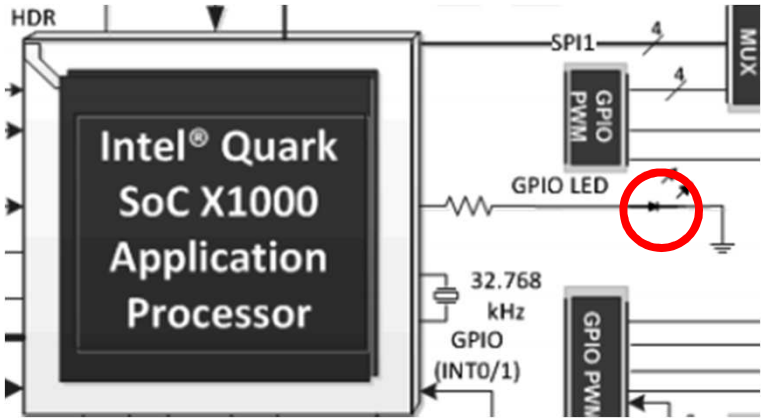
Ambiente Arduino : system



# Galileo:  Hardware e Ambiente de desenvolvimento

Acesso a E/S via Linux Sysfs

```
echo -n "3" > /sys/class/gpio/export
echo -n "out" > /sys/class/gpio/gpio3/direction
echo -n "strong" > /sys/class/gpio/gpio3/drive
echo -n "1" > /sys/class/gpio/gpio3/value
```



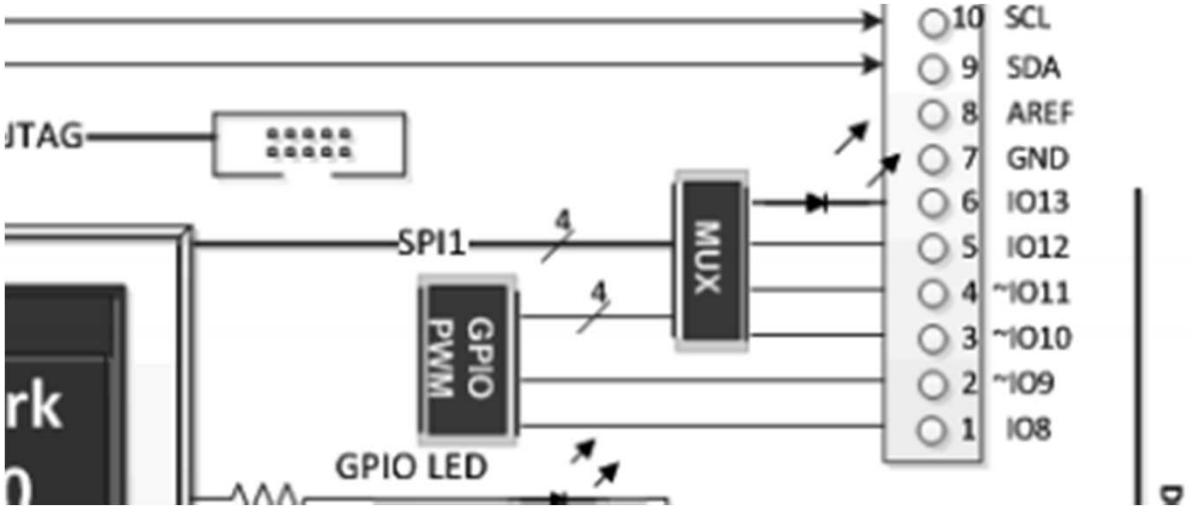

# Galileo: Hardware e Ambiente de desenvolvimento

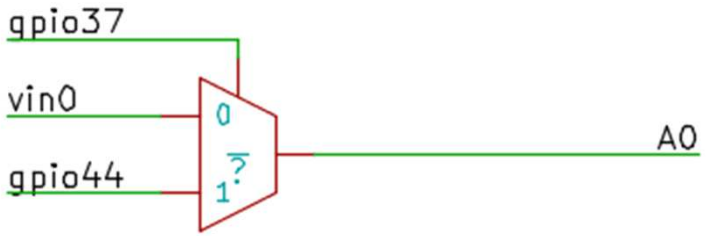
Acesso a E/S via Linux Sysfs

```
void setup() {
  system ("echo -n \"3\" > /sys/class/gpio/export");
  system("echo -n \"out\" > /sys/class/gpio/gpio3/direction");
  system("echo -n \"strong\" > /sys/class/gpio/gpio3/drive");
  system("echo -n \"1\" > /sys/class/gpio/gpio3/value");
}

void loop() {
  // put your main code here, to run repeatedly:

}
```

# Galileo:  Hardware e Ambiente de desenvolvimento

Pinos de E/S multiplexados



# Galileo:  Hardware e Ambiente de desenvolvimento

Desafio: Controlar o pino 13 como saída