Fonctions logiques

(Portes logiques)

ET (esperluette)

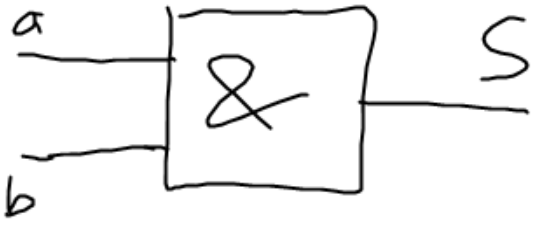


Table de vérité :

a	b	S
0	0	0
0	1	0
1	0	0
1	1	1

Arduino : &&

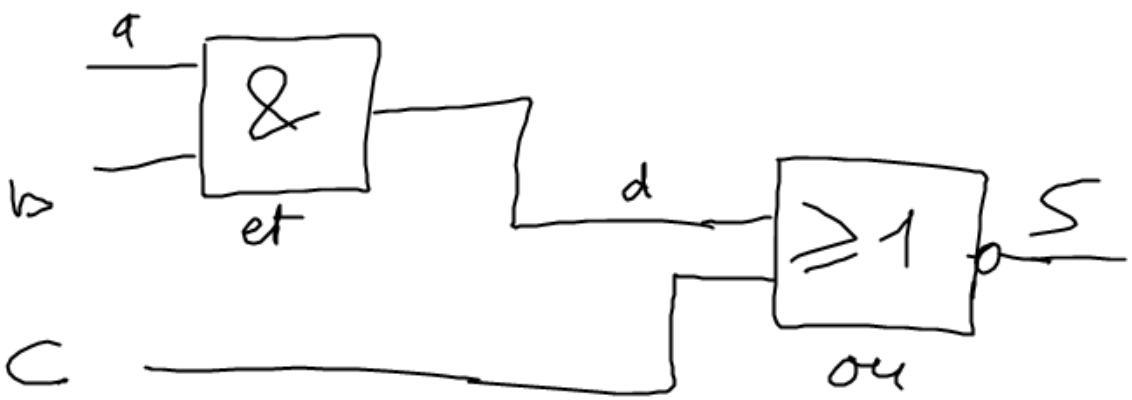
Equation : $S = a.b$

OU

a	b	S
0	0	0
0	1	1
1	0	1
1	1	1

Arduino : || (2× grep)

Equation : $S = a + b$



a	b	c	S
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

$$S = \overline{a.b + c}$$

$$= \overline{a.b}.\overline{c}$$

$$= (\bar{a} + \bar{b})\,\bar{c}$$

NON

a	S
0	1
1	0

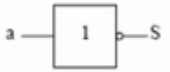
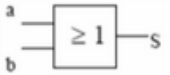
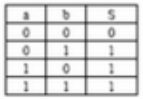
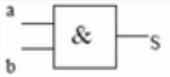
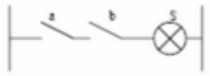
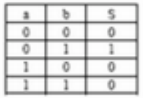
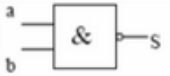
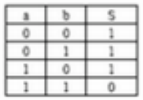
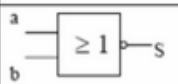
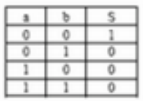
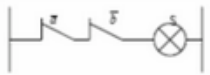
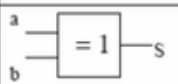
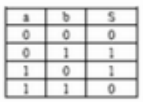
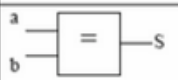
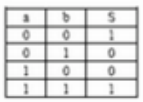
$$S = \bar{a}$$

$$S = a(b+c) = ab + ac$$

$$S = a + b.c = (a+b).(a+c)$$

principaux théorèmes et propriétés sont rappelés dans le tableau suivant :

Propriétés / théorèmes	Equations logiques
Commutativité	$a + b = b + a$ $a \cdot b = b \cdot a$
Associativité	$(a + b) + c = a + (b + c)$ $(a \cdot b) \cdot c = a \cdot (b \cdot c)$
Distributivité	$a \cdot (b + c) = (a \cdot b) + (a \cdot c)$ $a + (b \cdot c) = (a + b) \cdot (a + c)$
Eléments neutres Théorème des bornes universelles	$a + 0 = a$ $a \cdot 1 = a$
Complémentation Théorème de non contradiction	$a + \overline{a} = 1$ $a \cdot \overline{a} = 0$
Théorème d'impotence	$a + a = a$ $a \cdot a = a$
Eléments absorbants Théorème du tiers exclus	$a + 1 = 1$ $a \cdot 0 = 0$
Théorème d'absorption	$a + (a \cdot b) = a$ $a \cdot (a + b) = a$
Théorème d'involution	$(\overline{\overline{a}}) = a$ $\overline{(\overline{a})} = \overline{a}$
Théorème d'inclusion	$a\,b + a\,\overline{b} = a$

Opérateur	équation logique	symbole AFNOR	symbole ASGS	table de vérité	schéma à contact
OUI	$S = a$				
NON	$S = \overline{a}$				
OU	$S = a + b$				
ET	$S = a.b$				
INHIBITION	$S = \overline{a}.b$				
NAND (NON ET)	$S = \overline{a.b} = \overline{a} + \overline{b}$				
NOR (NON OU)	$S = \overline{a + b} = \overline{a}.\overline{b}$				
OU EXCLUSIF	$S = a \oplus b$				
IDENTITE	$S = \overline{a \oplus b}$				

Lycée Stanislas | Lycée Stanislas | algèbre de boole | porte logique - Re | TI-Planet | porte lo | page0m.png (Ima | 74HC05 - Rech

https://www.google.com/search?q=74HC05&client=firefox-b-d&sca_esv=eecdb16faa9e1d7

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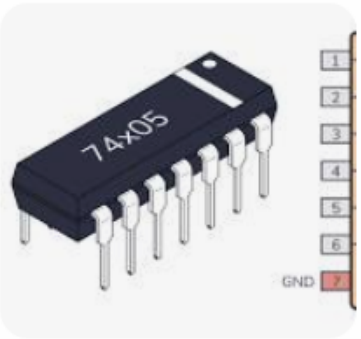
Google 74HC05 Connexion

Diodes Incorporated 74HC05 Série Onduleurs

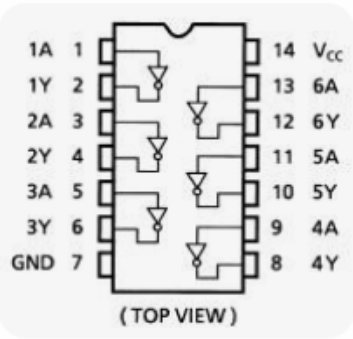
Onduleurs HEX INVERTERS 2-6V 4mA at VCC 4.5V. Diodes Incorporated 74HC05T14-13.
74HC05T14-13; Diodes Incorporated; 1: 0,58 €; 2 765En stock.

Images

74HC05 Datasheet(PDF) - ST...
ALLDATASHEET.COM



7400 Series Guide: 74HC05/7...
Build Electronic Circuits



74HC05 Datasheet PDF , Tosh...
DATASHEETBANK.COM

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composant-electronique.fr
https://composant-electronique.fr › circuit-integre-logiqu...

Circuit intégré logique 74HC05. Avtronic

Circuit intégré logique 74HC05. HEX INVERTER OPEN COLLECTOR. Constructeurs:

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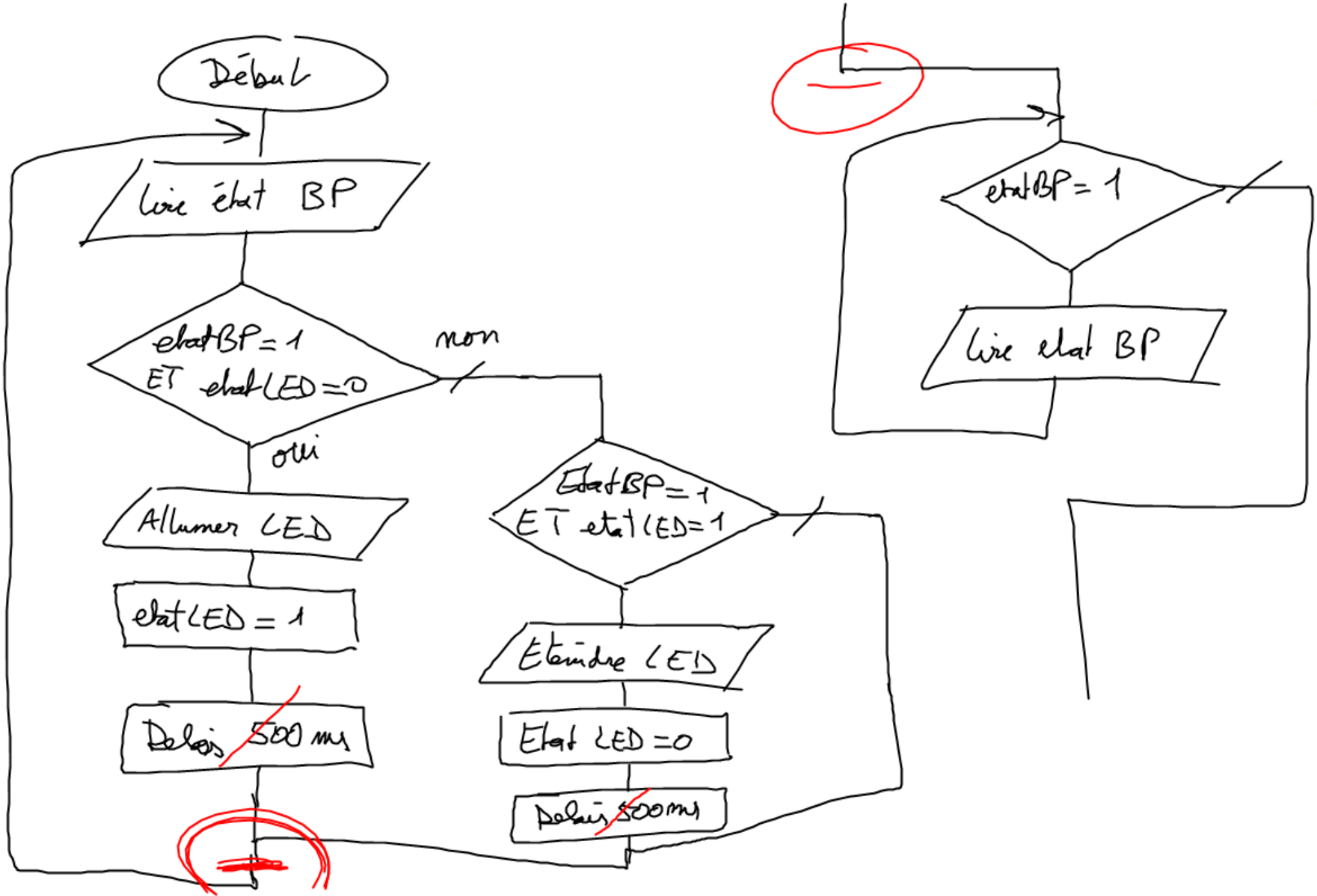
Début
Lire état BP
etatBP = 1
ET etatLED = 0
non
oui
Allumer LED
etatLED = 1
Delais 500 ms
EtatBP = 1
ET etatLED = 1
Etaindre LED
Etat LED = 0
Delais 500ms
etatBP = 1
Lire etat BP

sketch_mar07a | Arduino 1.8.12

Fichier Édition Croquis Outils Aide

sketch_mar07a §

7/7

```
void setup() {
  pinMode(pinBP, INPUT);
  pinMode(pinLED, OUTPUT);
}

void loop() {
  etatBP = digitalRead(pinBP);
  if (etatBP == 1 && etatLED == 0) {
    digitalWrite(pinLED, 1);
    etatLED = 1;
  }
  else if (etatBP == 1 && etatLED == 1) {
    digitalWrite(pinLED, 0);
    etatLED = 0;
  }
  while (etatBP == 1) {
    etatBP = digitalRead(pinBP);
```

Formatage automatique terminé.

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Arduino Uno sur COM5

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