Politecnico di Torino
III Facoltà di Ingegneria

Sistemi elettronici a basso consumo
Relazioni di laboratorio

Laurea Magistrale in Ingegneria Elettronica

Orientamento: Sistemi Elettronici

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Laboratorio 1

1.1 Calcolo di probabilità e attività

Il primo esercizio consiste nell'esempio di un inverter descritto in VHDL e riportato di seguito:

```
library IEEE;
use IEEE.std_logic_1164.all; -- libreria IEEE con definizione tipi standard logic
use WORK.constants.all; -- libreria WORK user-defined

entity IV is
        Port (  A:       In       std_logic;
                Y:       Out      std_logic);
end IV;


architecture BEHAVIORAL of IV is

begin
        Y <= not(A) after IVDELAY;
        -- Y <= not(A);

end BEHAVIORAL;

configuration CFG_IV_BEHAVIORAL of IV is
        for BEHAVIORAL
        end for;
end CFG_IV_BEHAVIORAL;
```

Il risultato della simulazione è riportato in figura 1.1a.

(a)
data
a

(b)
data
b

Figure 1.1: all the data

Si osserva che l'uscita commuta invertendo l'ingresso ma con un ritardo dato dall'uso dei generics.

```
bla bla bla including comments between this ''verbatim'' commands
you can ingore latex commands
```

pippo	pluto	indiana pipps	gilberto de pippis
topolino	minni	tip	tap
paperino	paperina	orazio	clarabella
qui	quo	qua	ottoperotto
zio paperone	gastone	paperoga	battista

Table 1.1: A caption for your table

1.1.1 Porte logiche elementari

1.1.2 Half Adder e Full Adder

Ciao mi chiamo **Filippo**

1.2 Sintesi RCA e analisi di potenza

1.2.1 Example for using some latex feature

1.2.2 Example of an itemize

- this is the first item

- this is the second item...

- if you want to change the point of the item do as in the following ite:

- whithin squared parentheses you can put a sign you like

1.2.3 Eample of an enumeration

1. this is the first point

2. the second.....

1.2.4 example of a description

latex is a powerful editing and formatting language, whaich helps you at writing reporte, books, letters, or whatever, just using the brain once at the beginning; it comes for free, and is completely portable

word is an awful terrible and nasty editing suite, it is proprietary, not portable, it occupies a lot of space, you go mad with formatting, and very often you loose you work all in a sudden.

1.2.5 Example of a table:

Other features are available for table formatting: just refer to the manuals. For what concerns equations: what do you think about the word equation editor? Well, whatever you will try to do, you will loose your afternoom on it, and still you are not sure it will have a decent aspect. The equation suite in latex is extremely powerful, and her you anly a very small example: refer to the manuals and to AMS-MATH suite for help.

1.2.6 Example of a small equation:

writing
an equation on line is easy $a \cdot \int_0^\infty i(t)\frac{di}{dt}$ while if you want to better display it just include it in this way:

$$a \cdot \int_0^\infty i(t)\frac{di}{dt}$$

and finally if you want to refer and number the equation as the 1.1 then the syntax is:

$$a \cdot \int_0^\infty i(t) \cdot \frac{di}{dt} \tag{1.1}$$

1.3 Analisi di un Multiplexer

1.4 Analisi di un Contatore Sincrono