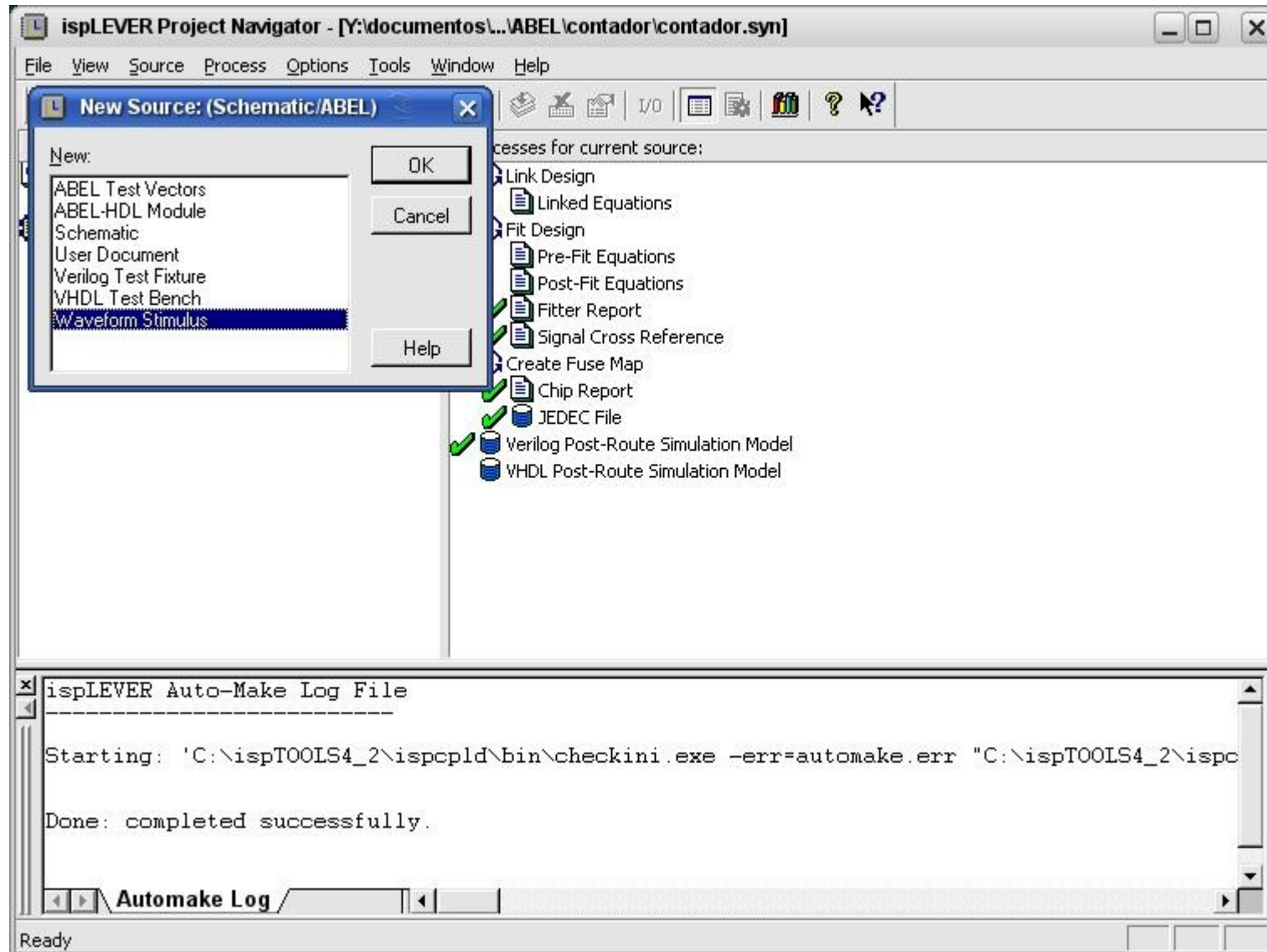
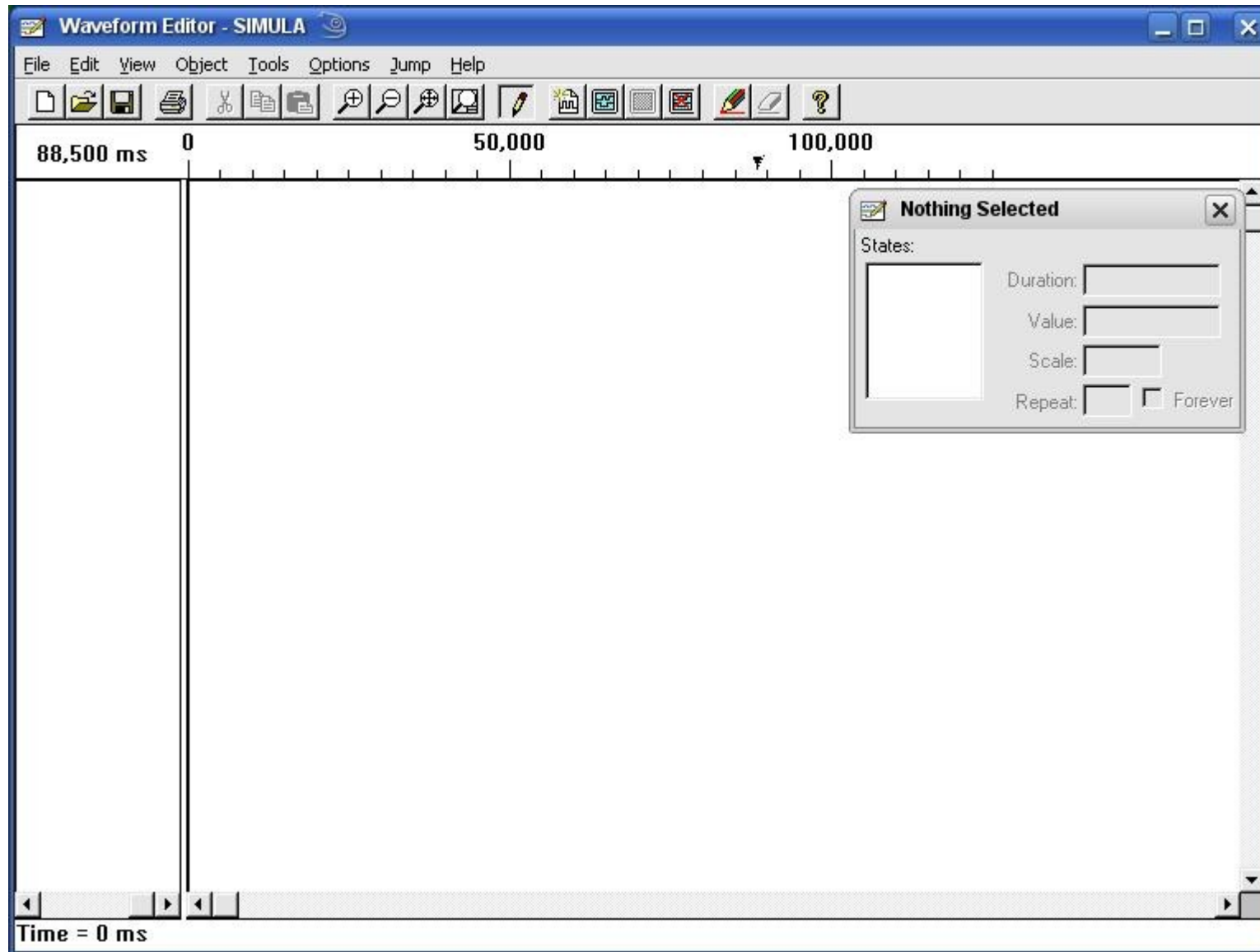
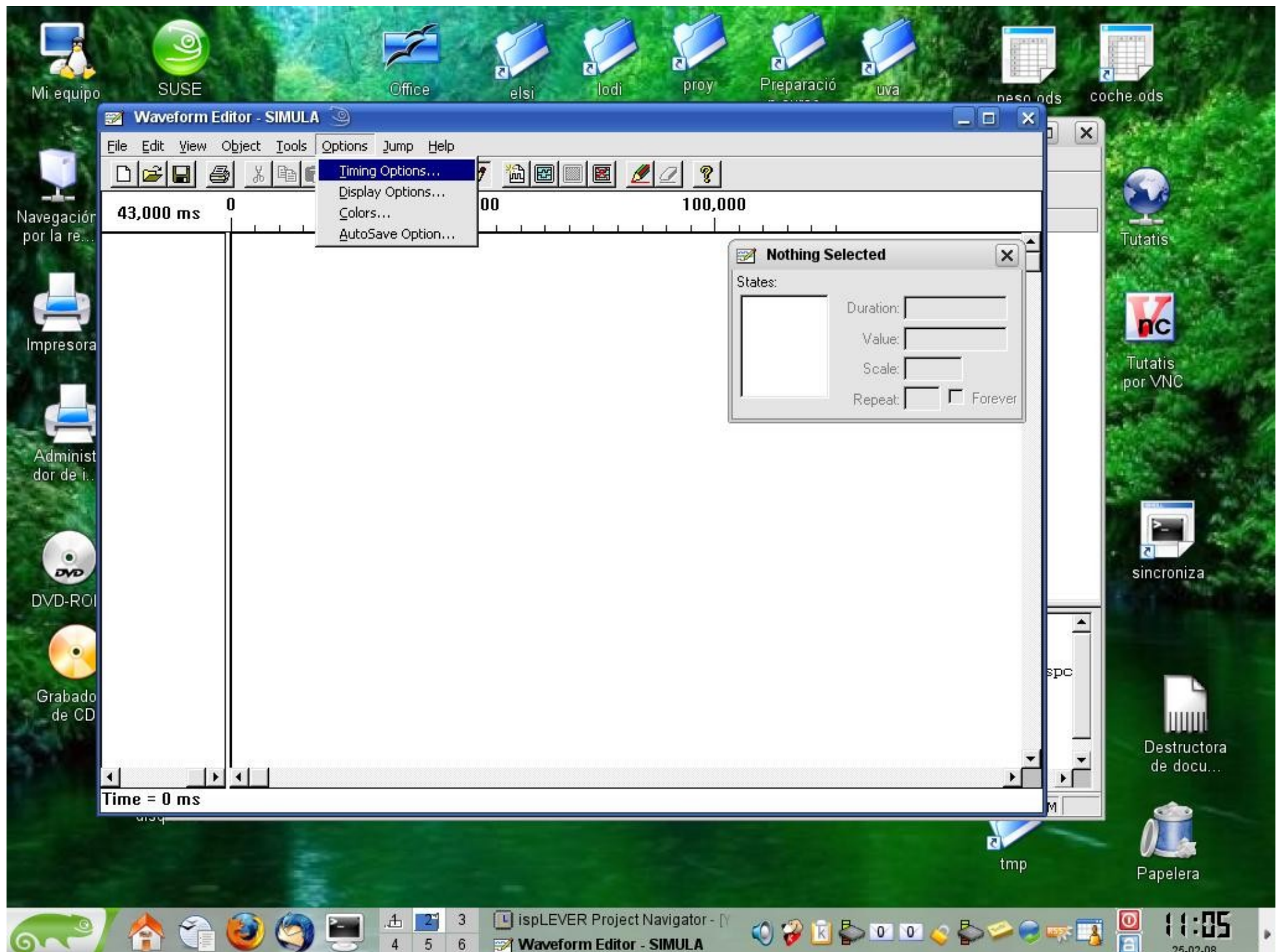


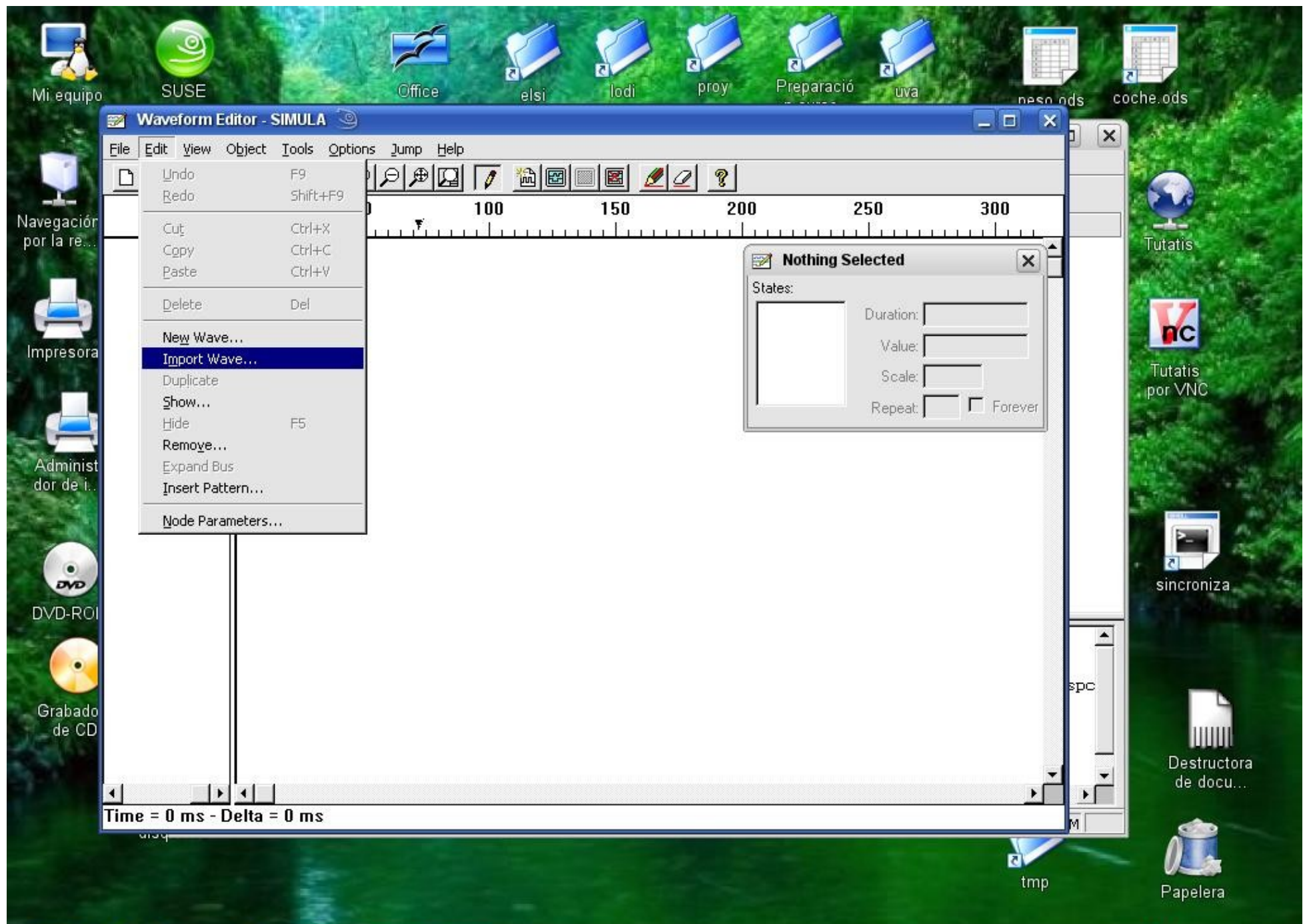
Simulación con ispLEVER

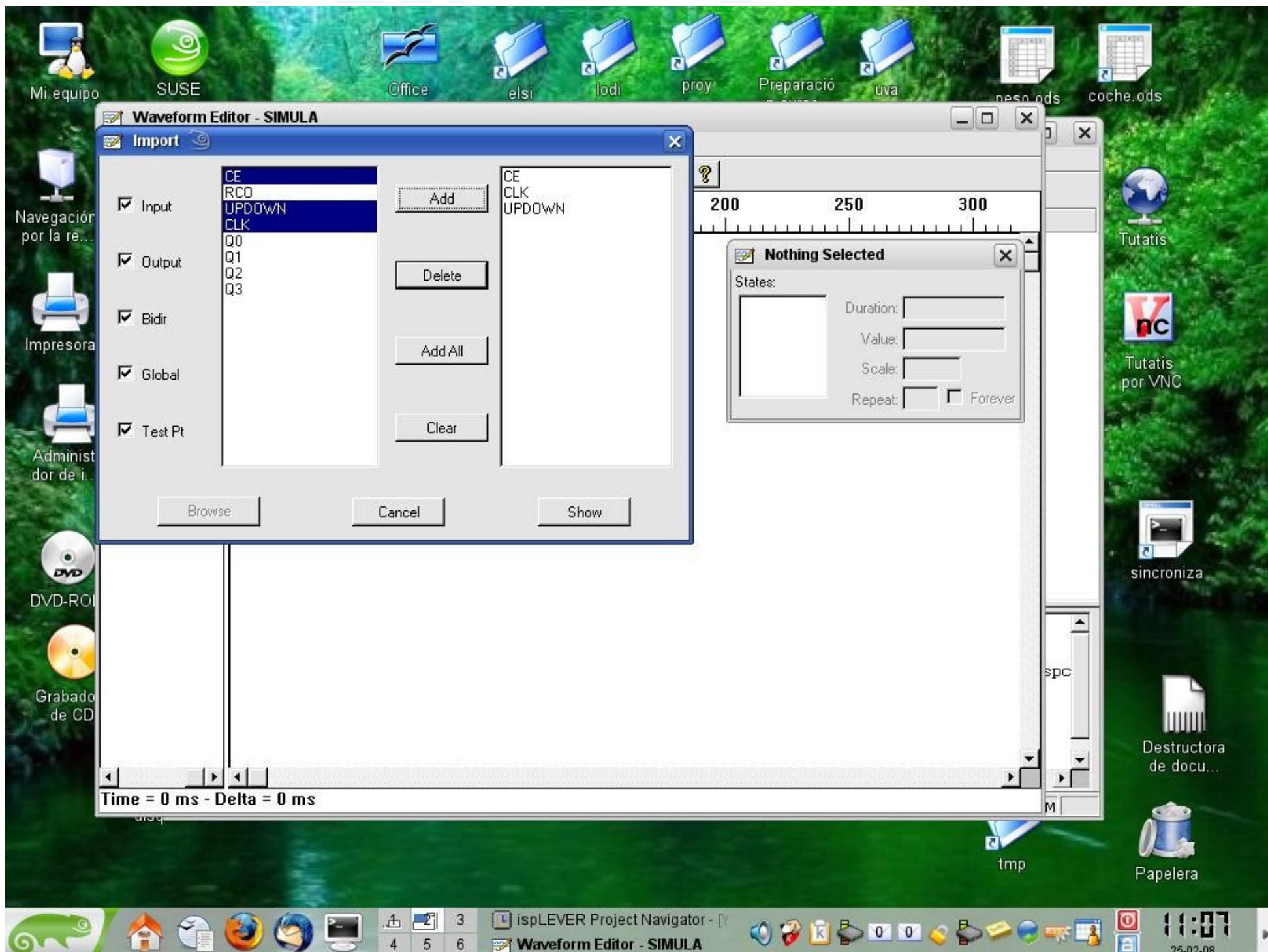
```
MODULE contador;
TITLE 'Contador Up-down de 4 bits';
UPDOWN, CLK, RCO, CE pin istype 'com';
Q3..Q0 pin istype 'reg';
equations
[Q3..Q0].CLK=CLK;
when (CE==0) then //no cuenta
{
    RCO=0;
    [Q3..Q0]:=[Q3..Q0];
}
else when (UPDOWN==1 ) then //arriba
{
    when ([Q3..Q0]==9) then //fin de cuenta
    {
        RCO=1;
        [Q3..Q0]:=0; //da la vuelta
    }
    else
        [Q3..Q0]:=[Q3..Q0]+1; //cuenta arriba
}
else //abajo
{
    when ([Q3..Q0]==0) then //fin de cuenta
    {
        RCO=1;
        [Q3..Q0]:=9; //da la vuelta
    }
    else
        [Q3..Q0]:=[Q3..Q0]-1; //cuenta arriba
}
END
```

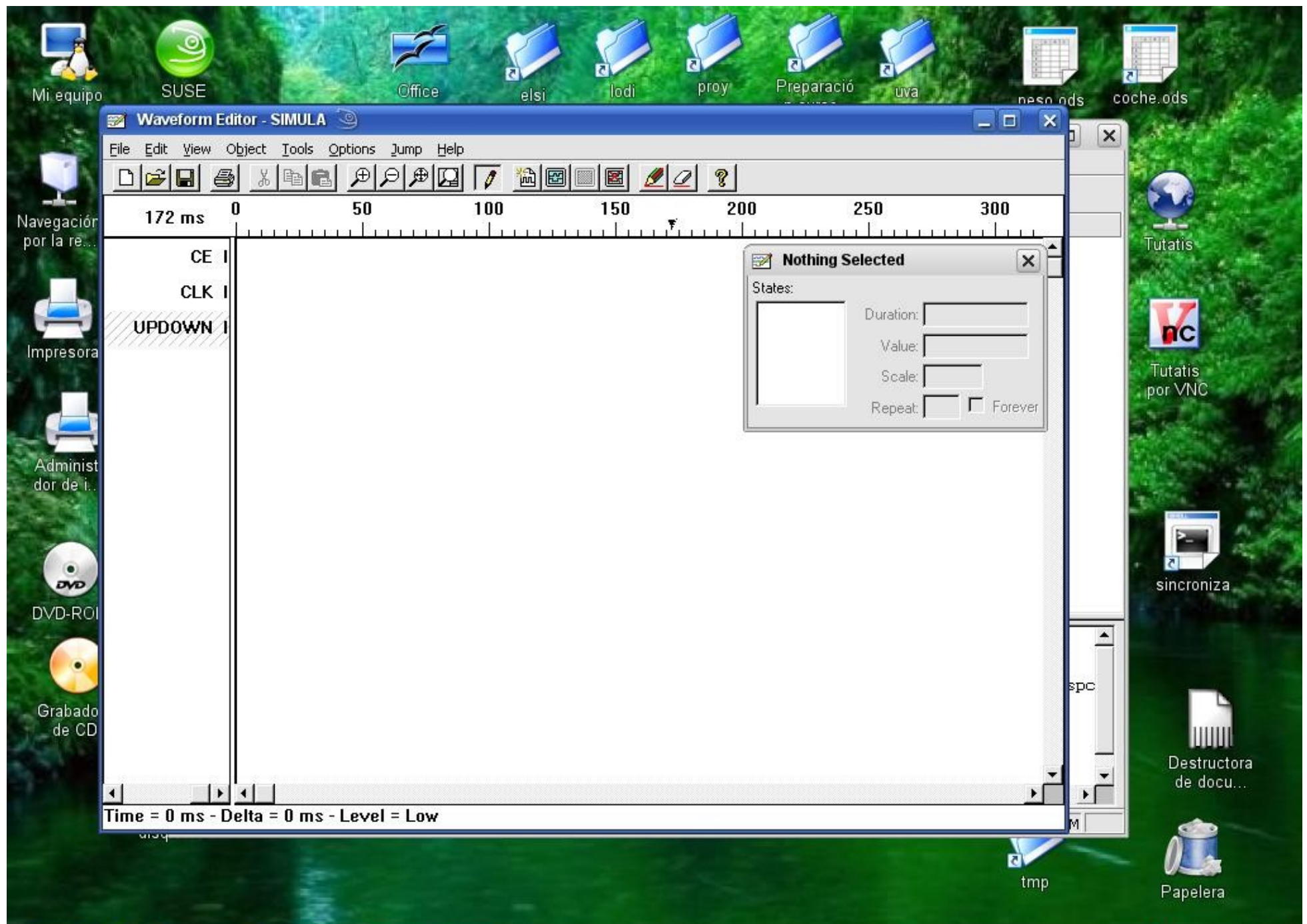


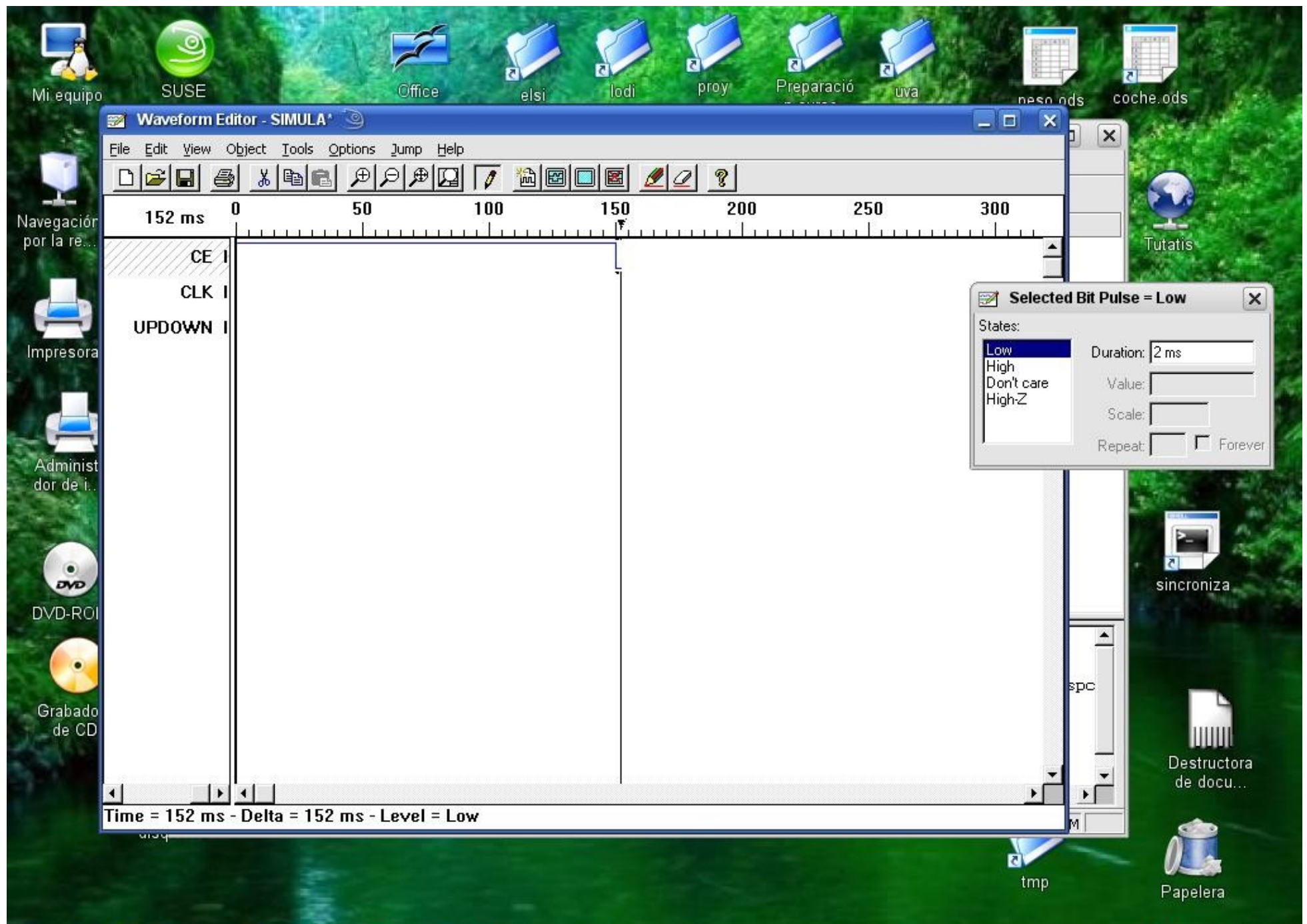


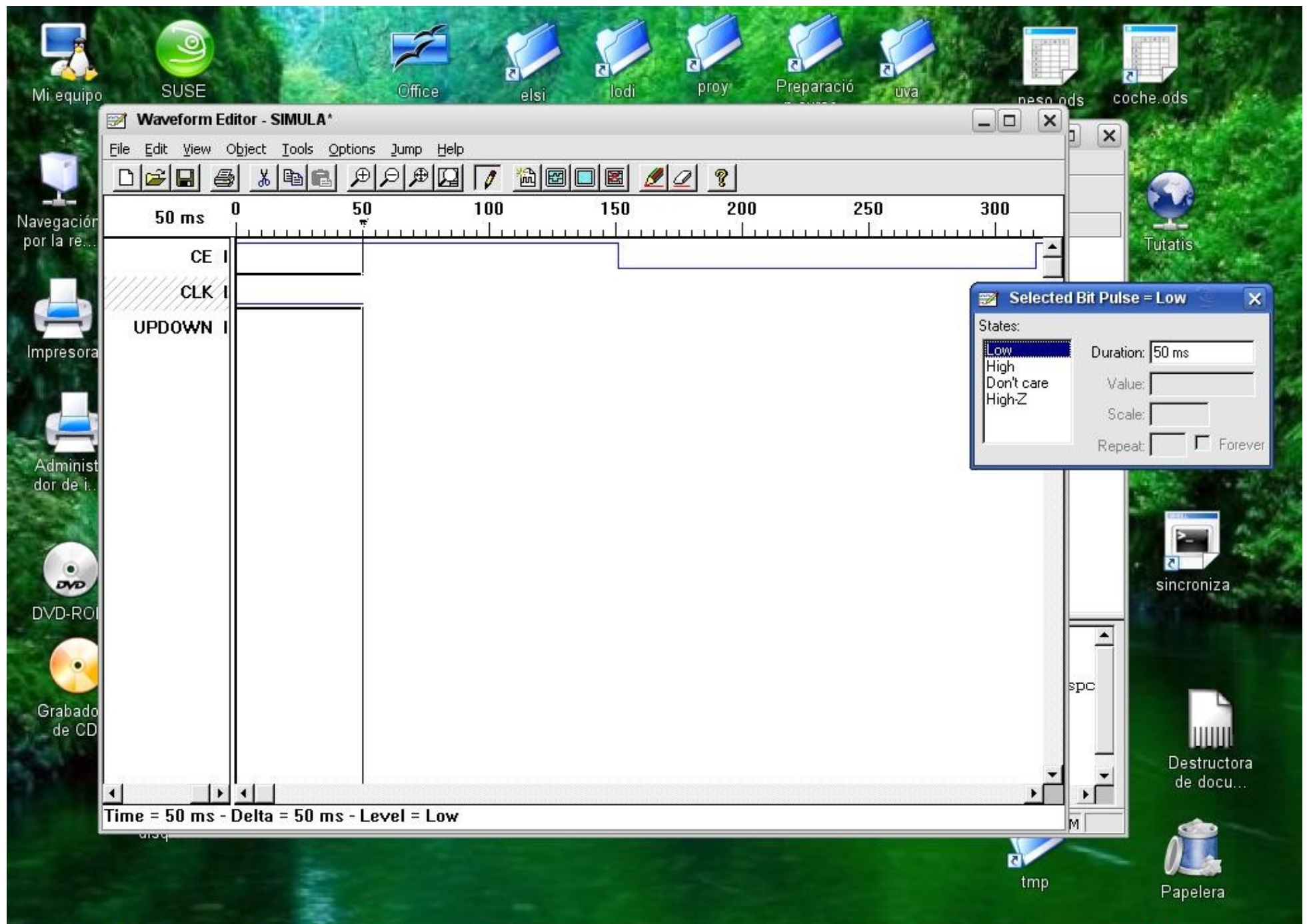






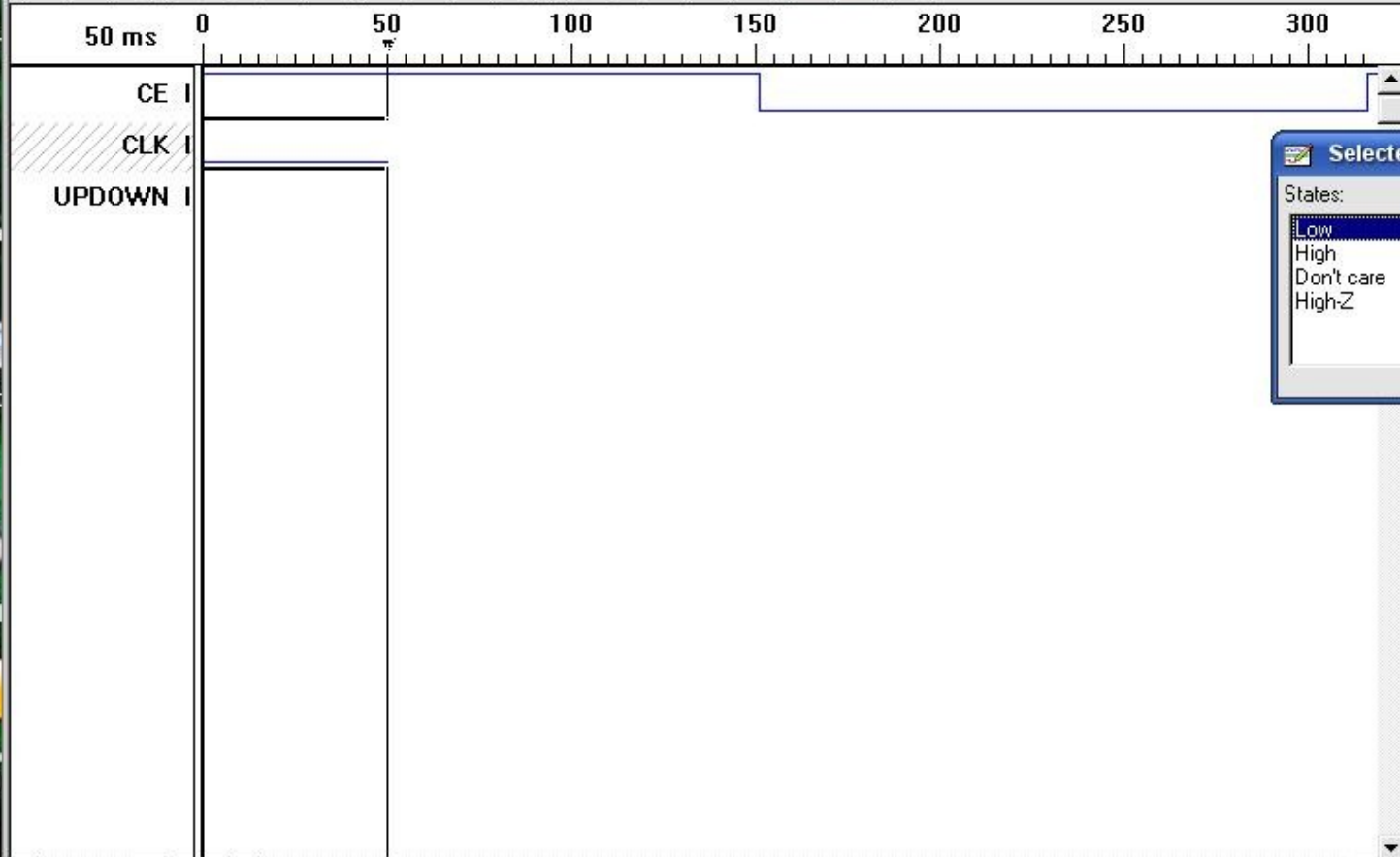






Waveform Editor - SIMULA*

File Edit View Object Tools Options Jump Help



Time = 50 ms - Delta = 50 ms - Level = Low

Selected Bit Pulse = Low

States:

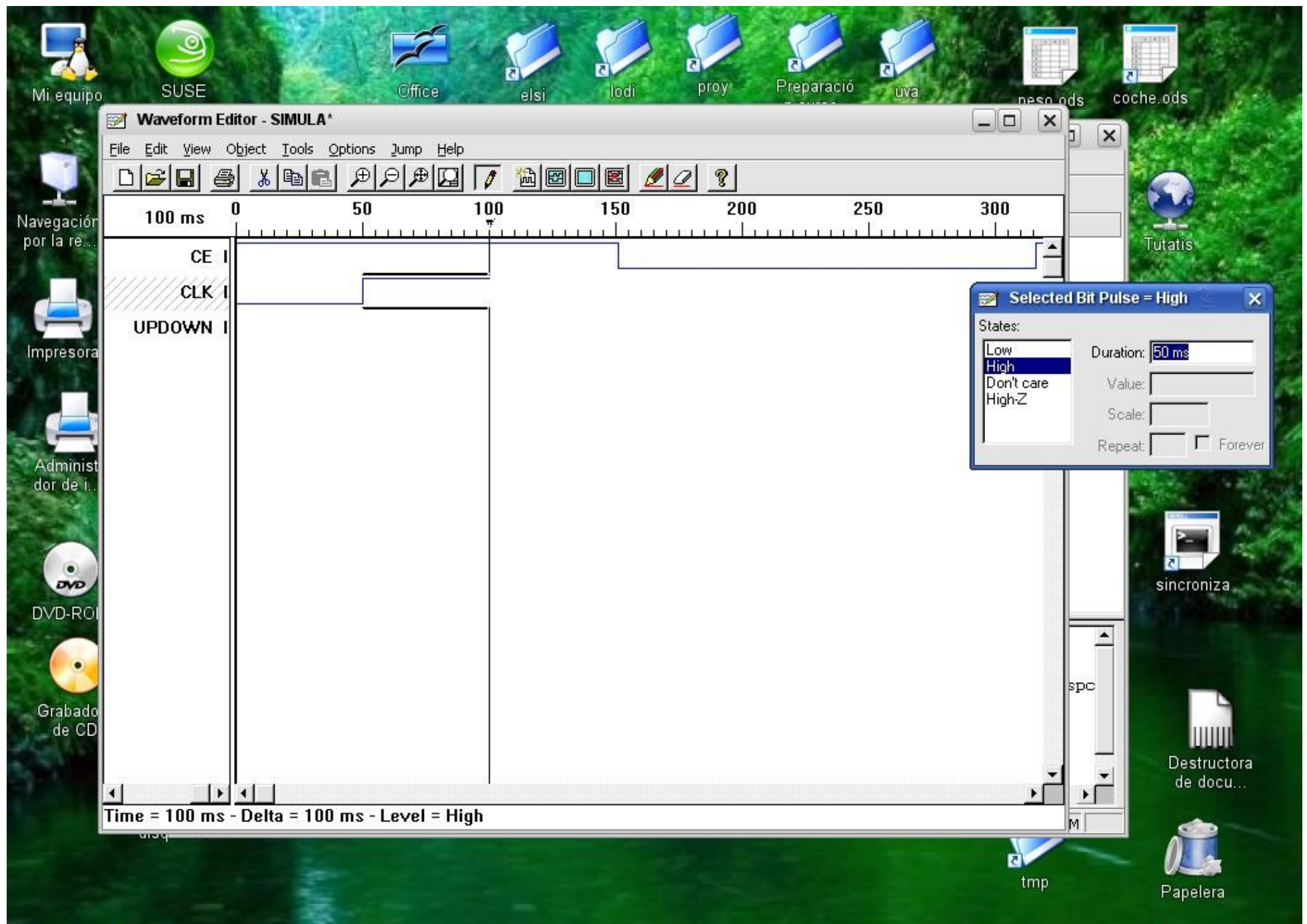
- Low
- High
- Don't care
- High-Z

Duration: 50 ms

Value:

Scale:

Repeat: ☐ Forever



Waveform Editor - SIMULA*

File Edit View Object Tools Options Jump Help



100 ms 0 50 100 150 200 250 300

CE I
CLK I
UPDOWN I

Time = 100 ms - Delta = 100 ms - Level = High

Selected Bit Pulse = High

States:

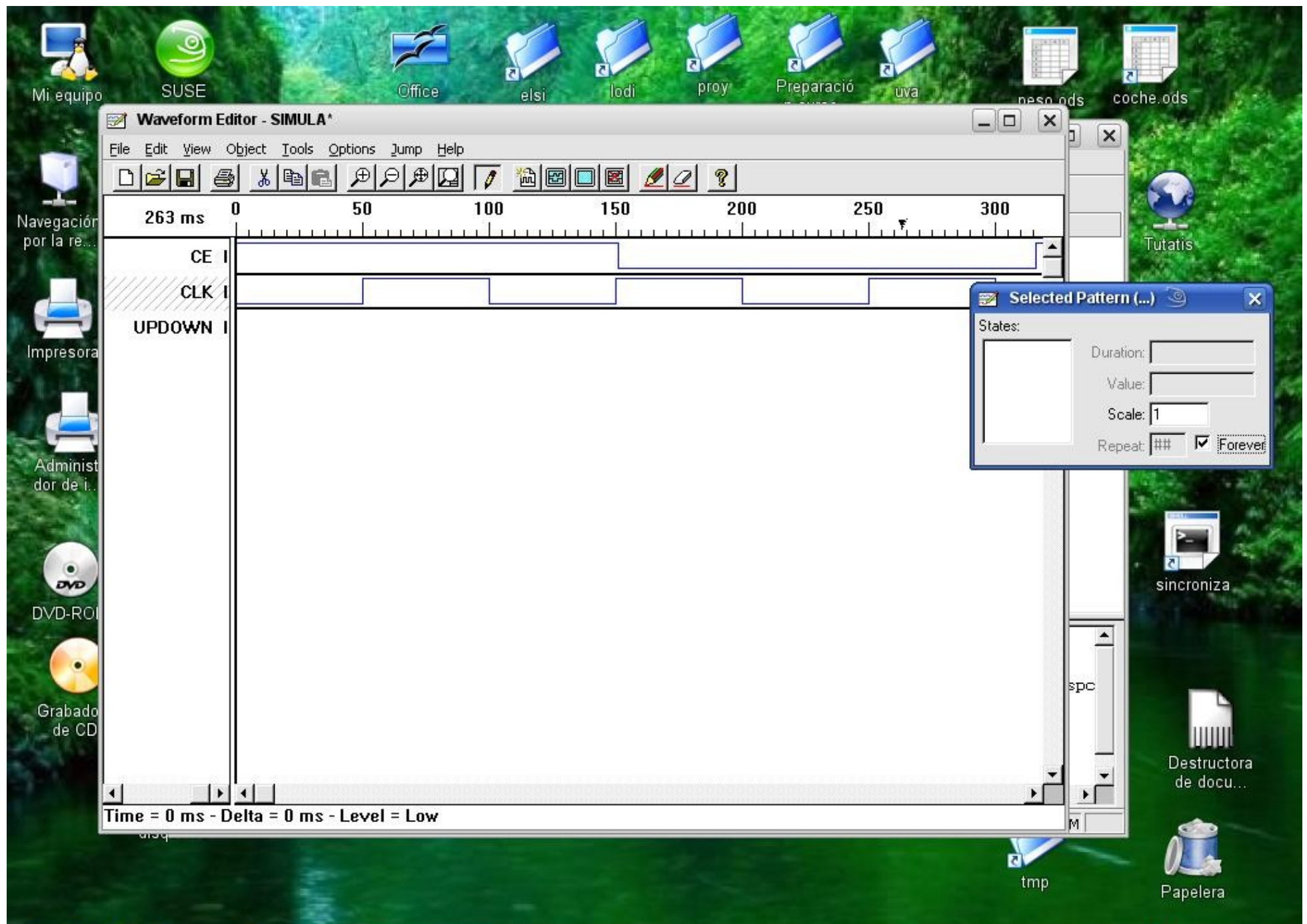
- Low
- High
- Don't care
- High-Z

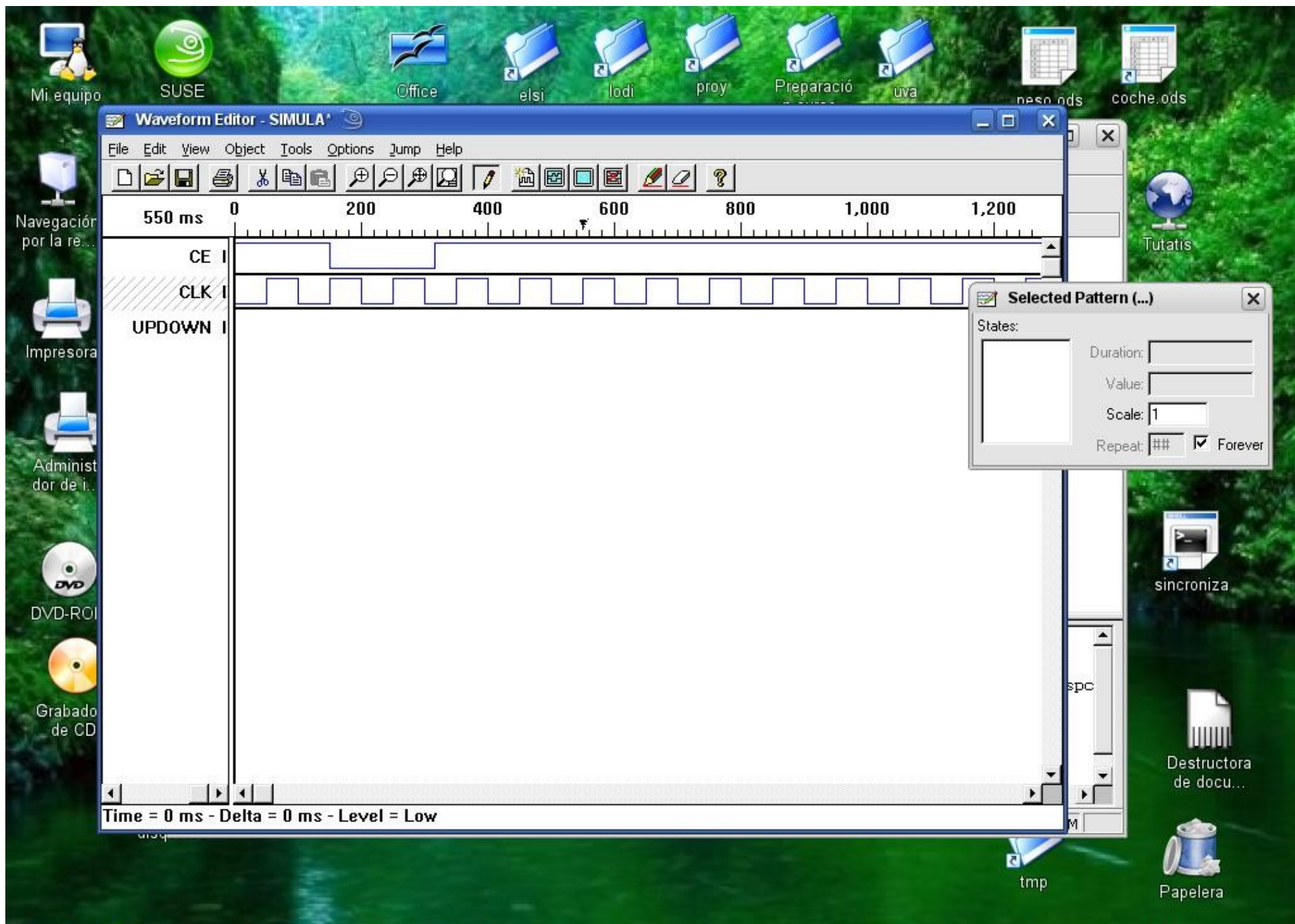
Duration: 50 ms

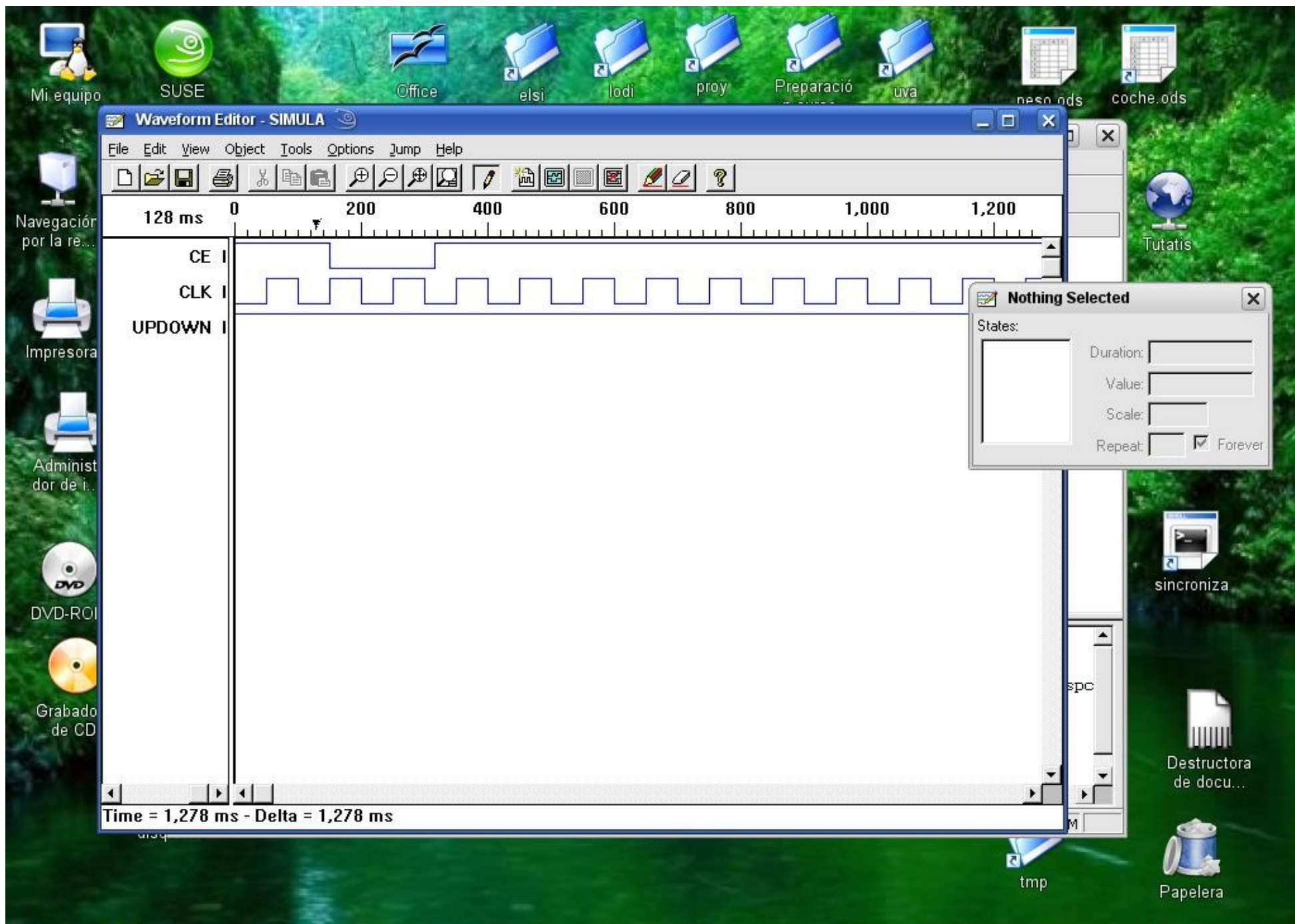
Value:

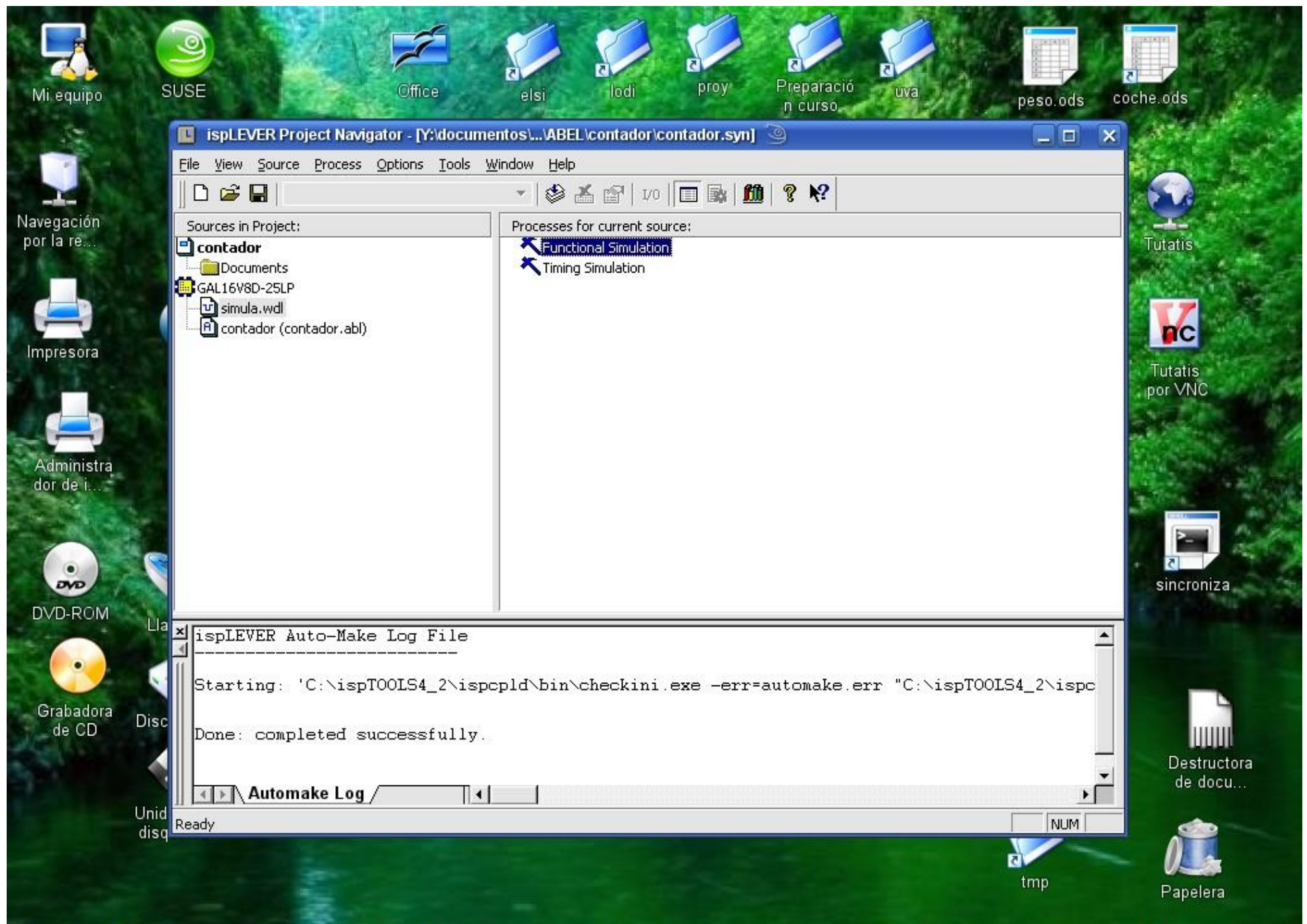
Scale:

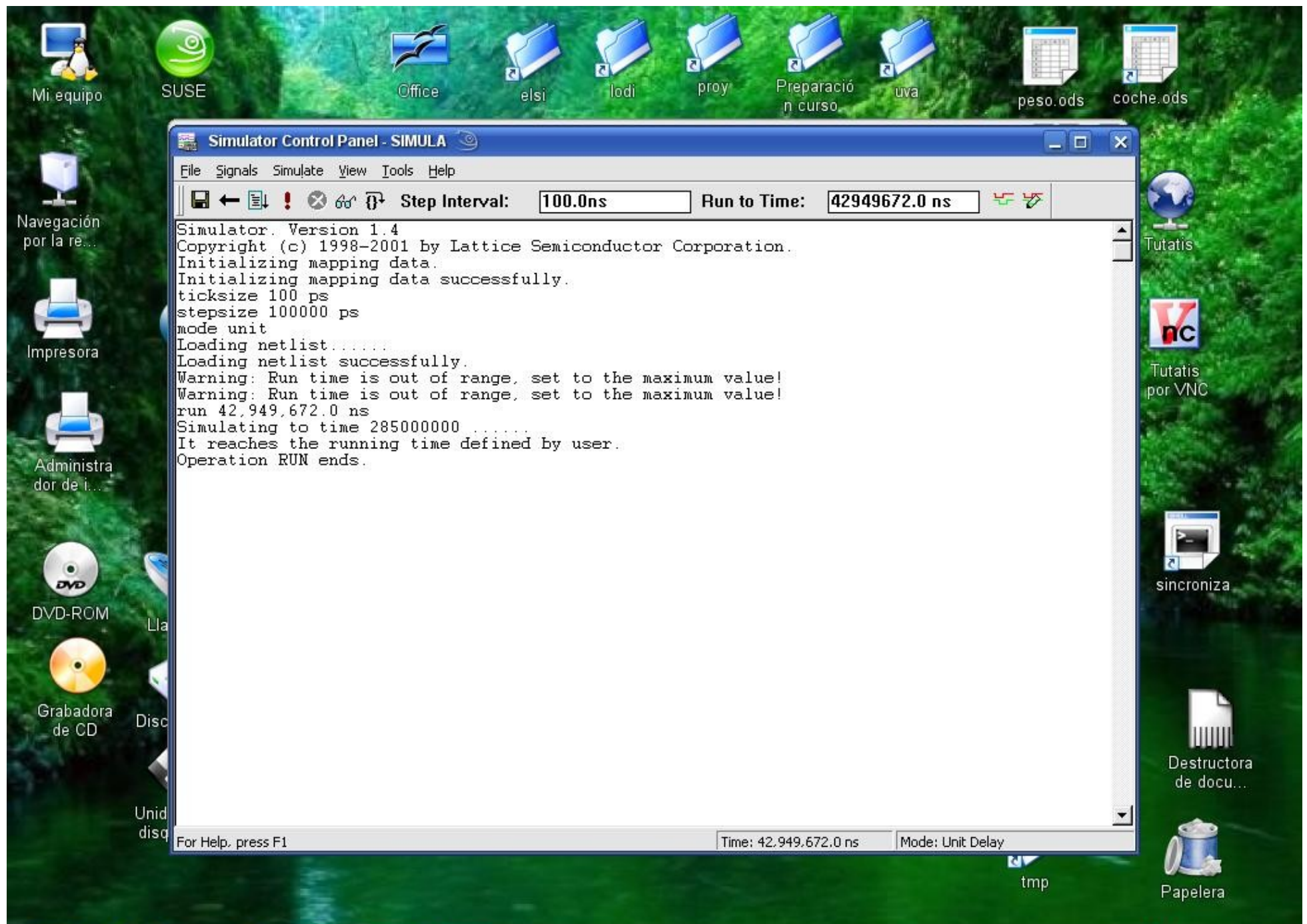
Repeat: ☐ Forever











Simulator Control Panel - SIMULA

File Signals Simulate View Tools Help

Step Interval: 100.0ns Run to Time: 42949672.0 ns

Simulator. Version 1.4
Copyright (c) 1998-2001 by Lattice Semiconductor Corporation.
Initializing mapping data.
Initializing mapping data successfully.
ticksize 100 ps
stepsize 100000 ps
mode unit
Loading netlist.....
Loading netlist successfully.
Warning: Run time is out of range, set to the maximum value!
Warning: Run time is out of range, set to the maximum value!
run 42,949,672.0 ns
Simulating to time 285000000
It reaches the running time defined by user.
Operation RUN ends.

For Help, press F1

Time: 42.949.672.0 ns

Mode: Unit Delay

