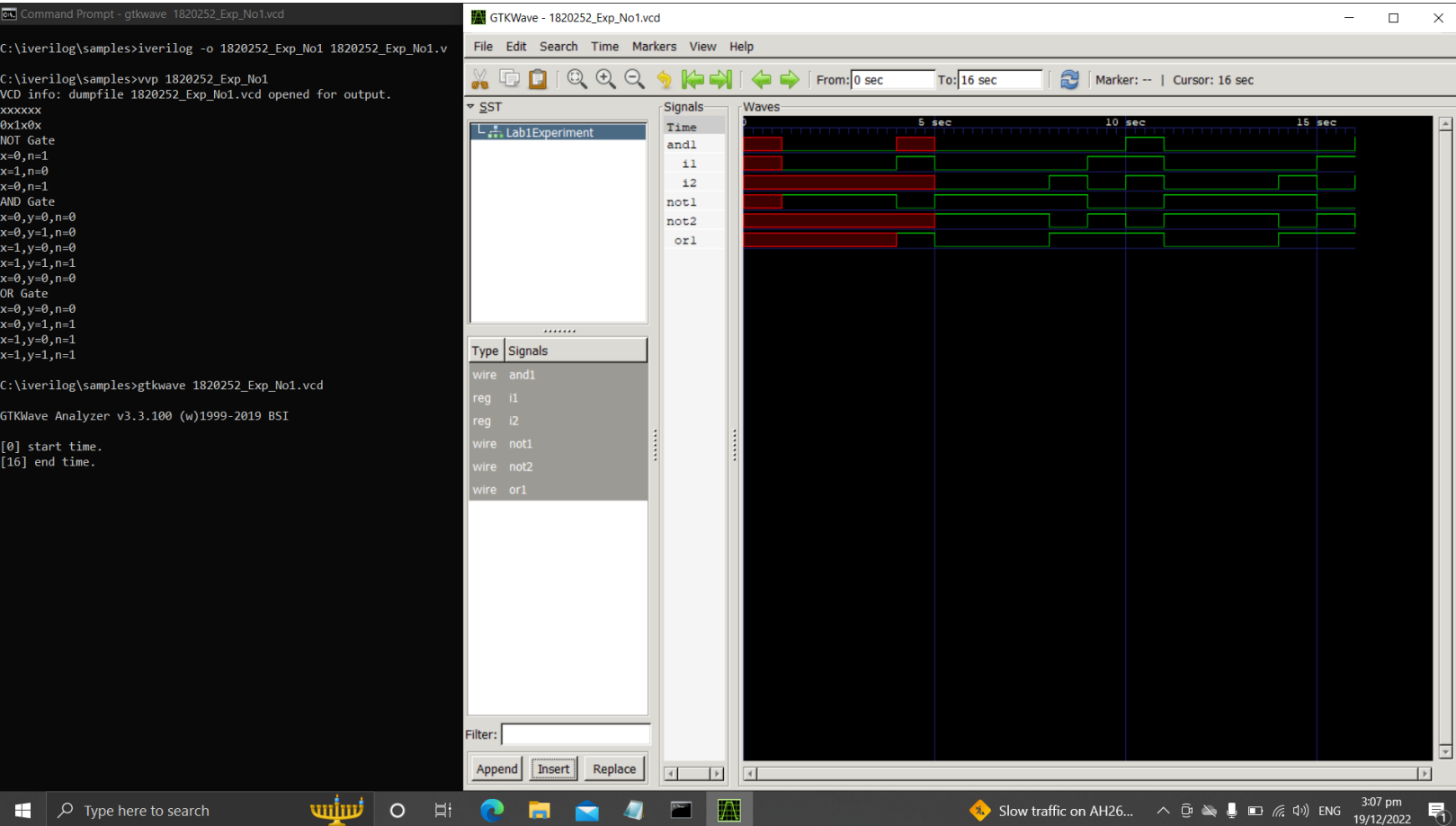


Bacanto, Charles Dominique A.

## Screenshots

### Experiment 1



## Experiment 2

Command Prompt - gtkwave 1820252\_Exp\_No2.vcd

```
C:\iverilog\samples>vvp 1820252_Exp_No2
VCD info: dumpfile 1820252_Exp_No2.vcd opened for output.
xxxxxxx
DeMorgan's Law
~((a)(b))
a=0, b=0, n=1
a=0, b=1, n=1
a=1, b=0, n=1
a=1, b=1, n=0
(~a)+(~b)
a=0, b=0, n=1
a=0, b=1, n=1
a=1, b=0, n=1
a=1, b=1, n=0
Therefore, ~((a)(b)) == (~a)+(~b)

~(a+b)
a=0, b=0, n=1
a=0, b=1, n=0
a=1, b=0, n=0
a=1, b=1, n=0
(~a)(~b)
a=0, b=0, n=1
a=0, b=1, n=0
a=1, b=0, n=0
a=1, b=1, n=0
Therefore, ~(a+b) == (~a)(~b)

part 1B
a=1, b=1, n=1
a=0, b=1, n=0
a=1, b=0, n=0
a=1, b=1, n=1

part 2A
a=1, b=1, n=1
a=1, b=0, n=0
a=0, b=1, n=0
a=0, b=0, n=0

part 2B
a=0, b=0, n=0
a=0, b=1, n=1
a=1, b=0, n=1
a=1, b=1, n=1
1820252_Exp_No2.v:129: $finish called at 36 (1s)

C:\iverilog\samples>gtkwave 1820252_Exp_No2.vcd
GTKWave Analyzer v3.3.100 (w)1999-2019 BSI
```

GTKWave - 1820252\_Exp\_No2.vcd

File Edit Search Time Markers View Help

From: 0 sec To: 36 sec Marker: -- Cursor: 31 sec

SST

- Experiment2
  - A1
  - A2
  - B1
  - B2

Signals

Time	Signal
	NAND1
	NOR1
	a
	b
	negativeAND1
	negativeOR1
	notA
	notB
	a
	b
	nor1
	nor2
	x
	a
	b
	notA
	notAOrnotB
	notB
	x
	a
	b
	nand1
	nand2
	x

Waves

10 sec 20 sec 30 sec

Type Signals

Type	Signal
wire	a
wire	b
wire	nand1
wire	nand2
wire	x

Filter:

Append Insert Replace

Windows Taskbar: Type here to search, 28°C Cloudy, 3:12 pm 19/12/2022

## Experiment 3

Command Prompt - gtkwave 1820252\_Exp\_No3.vcd

VCD info: dumpfile 1820252\_Exp\_No3.vcd opened for output.  
xxxx

```
part1 minterm: !A!B + !BC + !IC
a=0, b=0, c=0 : i=1
a=0, b=0, c=1 : i=1
a=0, b=1, c=0 : i=1
a=0, b=1, c=1 : i=0
a=1, b=0, c=0 : i=0
a=1, b=0, c=1 : i=1
a=1, b=1, c=0 : i=1
a=1, b=1, c=1 : i=0
```

```
part1 maxterm: (A+B+C)(!B+!C)
a=0, b=0, c=0 : i=1
a=0, b=0, c=1 : i=1
a=0, b=1, c=0 : i=1
a=0, b=1, c=1 : i=0
a=1, b=0, c=0 : i=0
a=1, b=0, c=1 : i=1
a=1, b=1, c=0 : i=1
a=1, b=1, c=1 : i=0
```

```
part5 minterm: !A!C!B+!ADB+!AD!C+!ABCD+AB!C
a=0, b=0, c=0, d=0 : i=1
a=0, b=0, c=0, d=1 : i=1
a=0, b=0, c=1, d=0 : i=0
a=0, b=0, c=1, d=1 : i=0
a=0, b=1, c=0, d=0 : i=0
a=0, b=1, c=0, d=1 : i=1
a=0, b=1, c=1, d=0 : i=1
a=0, b=1, c=1, d=1 : i=0
a=1, b=0, c=0, d=0 : i=0
a=1, b=0, c=0, d=1 : i=0
a=1, b=0, c=1, d=0 : i=1
a=1, b=0, c=1, d=1 : i=1
a=1, b=1, c=0, d=0 : i=1
a=1, b=1, c=0, d=1 : i=0
a=1, b=1, c=1, d=0 : i=0
a=1, b=1, c=1, d=1 : i=0
```

```
part5 maxterm: (!A+!B+!C)(!A+B+C)(A+!B+D)(A+B+!C)(!C+D)
a=0, b=0, c=0, d=0 : i=1
a=0, b=0, c=0, d=1 : i=1
a=0, b=0, c=1, d=0 : i=0
a=0, b=0, c=1, d=1 : i=0
a=0, b=1, c=0, d=0 : i=0
a=0, b=1, c=0, d=1 : i=1
a=0, b=1, c=1, d=0 : i=1
a=0, b=1, c=1, d=1 : i=0
a=1, b=0, c=0, d=0 : i=0
a=1, b=0, c=0, d=1 : i=0
a=1, b=0, c=1, d=0 : i=1
a=1, b=0, c=1, d=1 : i=1
a=1, b=1, c=0, d=0 : i=1
a=1, b=1, c=0, d=1 : i=0
a=1, b=1, c=1, d=0 : i=0
a=1, b=1, c=1, d=1 : i=0
```

GTKWave - 1820252\_Exp\_No3.vcd

File Edit Search Time Markers View Help

From: 0 sec To: 48 sec Marker: -- Cursor: 0 sec

SST

Lab3TestBench

P1Max

P1Min

P5Max

P5Min

Signals

Time

a

b

c

i

notA

notABC

notB

notBnotC

notC

BnotC

wire BnotC

wire a

wire b

wire c

wire i

wire notA

wire notAnotB

wire notB

wire notBnotC

wire notC

Waves

10 sec 20 sec 30 sec 40 sec

GTKWave - 1820252\_Exp\_No3.vcd

File Edit Search Time Markers View Help

From: 0 sec To: 48 sec Marker: -- Cursor: 48 sec

SST

Lab3TestBench

P1Max

P1Min

P5Max

P5Min

Signals

Time

ABnotC

AnotBD

a

b

c

d

i

notA

notABC

notAnotBnotC

notB

notC

notCD

ABnotC

AnotBCD

a

b

c

d

i

notA

notADB

notADnotC

notAnotCnotB

notB

notC

wire ABnotC

wire AnotBCD

wire a

wire b

wire c

wire d

wire i

wire notA

wire notADB

wire notADnotC

wire notAnotCnotB

wire notB

wire notC

Waves

10 sec 20 sec 30 sec 40 sec

C:\iverilog\samples>gtkwave 1820252\_Exp\_No3.vcd

## Experiment 4

Command Prompt - gtkwave 1820252\_Exp\_No4.vcd

```
13/12/2007 11:52 pm 4,155 sqrt.v1
19/09/2022 08:53 am 797 test
19/09/2022 08:53 am 157 test.v
36 File(s) 118,361 bytes
2 Dir(s) 183,600,521,216 bytes free

C:\iverilog\samples>iverilog -o 1820252_Exp_No4 1820252_Exp_No4.v
C:\iverilog\samples>vvp 1820252_Exp_No4
VCD info: dumpfile 1820252_Exp_No4.vcd opened for output.
xxx
00x

part1
2 a=0, b=0 : f=0
3 a=0, b=1 : f=1
4 a=1, b=0 : f=1
5 a=1, b=1 : f=0
6 a=0, b=0 : f=0

part3
7 a=0, b=0, c=0 : g=0
8 a=0, b=0, c=1 : g=0
9 a=0, b=1, c=0 : g=1
10 a=0, b=1, c=1 : g=0
11 a=1, b=0, c=0 : g=0
12 a=1, b=0, c=1 : g=1
13 a=1, b=1, c=0 : g=1
14 a=1, b=1, c=1 : g=1
15 a=0, b=0, c=0 : g=0

part5
16 a=0, b=0, c=0, d=0 : h=0
17 a=0, b=0, c=0, d=1 : h=1
18 a=0, b=0, c=1, d=0 : h=1
19 a=0, b=0, c=1, d=1 : h=1
20 a=0, b=1, c=0, d=0 : h=0
21 a=0, b=1, c=0, d=1 : h=1
22 a=0, b=1, c=1, d=0 : h=1
23 a=0, b=1, c=1, d=1 : h=1
24 a=1, b=0, c=0, d=0 : h=0
25 a=1, b=0, c=0, d=1 : h=1
26 a=1, b=0, c=1, d=0 : h=1
27 a=1, b=0, c=1, d=1 : h=1
28 a=1, b=1, c=0, d=0 : h=0
29 a=1, b=1, c=0, d=1 : h=1
30 a=1, b=1, c=1, d=0 : h=0
31 a=1, b=1, c=1, d=1 : h=1

C:\iverilog\samples>gtkwave 1820252_Exp_No4.v
'gtkwave' is not recognized as an internal or external command,
operable program or batch file.
```

GTKWave - 1820252\_Exp\_No4.vcd

File Edit Search Time Markers View Help

From: 0 sec To: 31 sec Marker: -- Cursor: 1 sec

SST

Lab4TB

p1

p3

p5

Type Signals

wire ABC

wire CD

wire a

wire and2

wire b

wire c

wire d

wire h

wire nor1

wire notCD

Filter:

Append Insert Replace

Signals

Time

a

b

f

AB

AC

BnotC

a

b

c

g

notC

ABC

CD

a

and2

b

c

d

h

nor1

notCD

Waves

9 sec 10 sec 27 sec

28°C Cloudy 3:24 pm 19/12/2022

## Experiment 5

