

→ cs student s / deeply / stack /

i - pad.

ls.

gvim stack.v

gvim stack.tb.v

gvim stack.tb.v.

gvim run_vcs.do

→ VCS - map de full

→ vim - gui - verdi

chmod 751 run_vcs.do

cd

source v / eshr c

./run_vcs.do

dc shell

gvim run_dc.tcl

Cat run_dc.tcl

dc-shell -f run_dc.tcl - output - log file

stack-synth.log

report: power → ipower.rpt

report: area → area.rpt

ls -lr

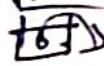
log file

gvim power.rpt
gvim area.rpt

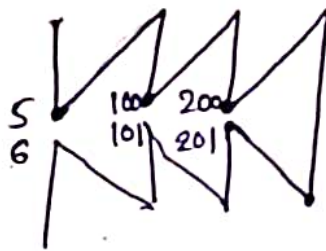
Stack: ~~First In~~ Last In first out.

push, pop, full, empty

application



store



15

→ what is stack.

→ operations in stack → code, tb.

→ uses & applications

→ konsole → commands

→ creating our req files - all files & tb files?

→ simulation? yes

⇒ dc shell.

synthes commands

→ setting search

gram run dc.tcl.

alternatives

• db → Gtech

2.8nm → netlist
32

→ analyse

→ elaborate

→ gtech

→ constraints.

↳ period → 2ns. →

max delay → 10.

→ compile ultra

→ netlist

→ time

→ power

→ area.

→ start - gui

(hardware design)

gwin run - vcs.do

2 commands

vcs... GUI

↓ o/p

errors

↓ o/p

→ waveform
sch.

high speed

lvt rvt hvt

low power

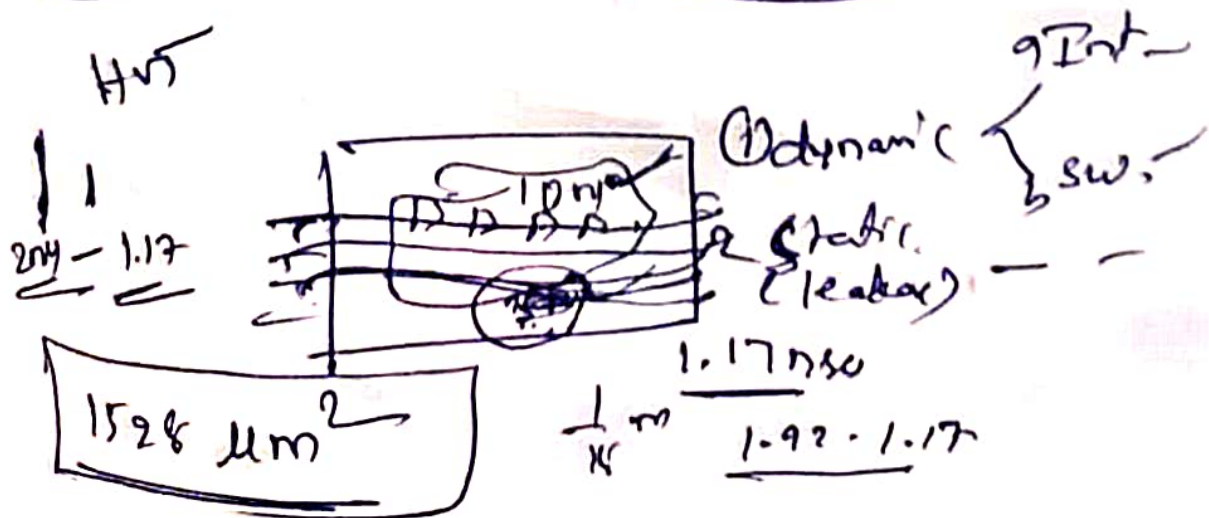
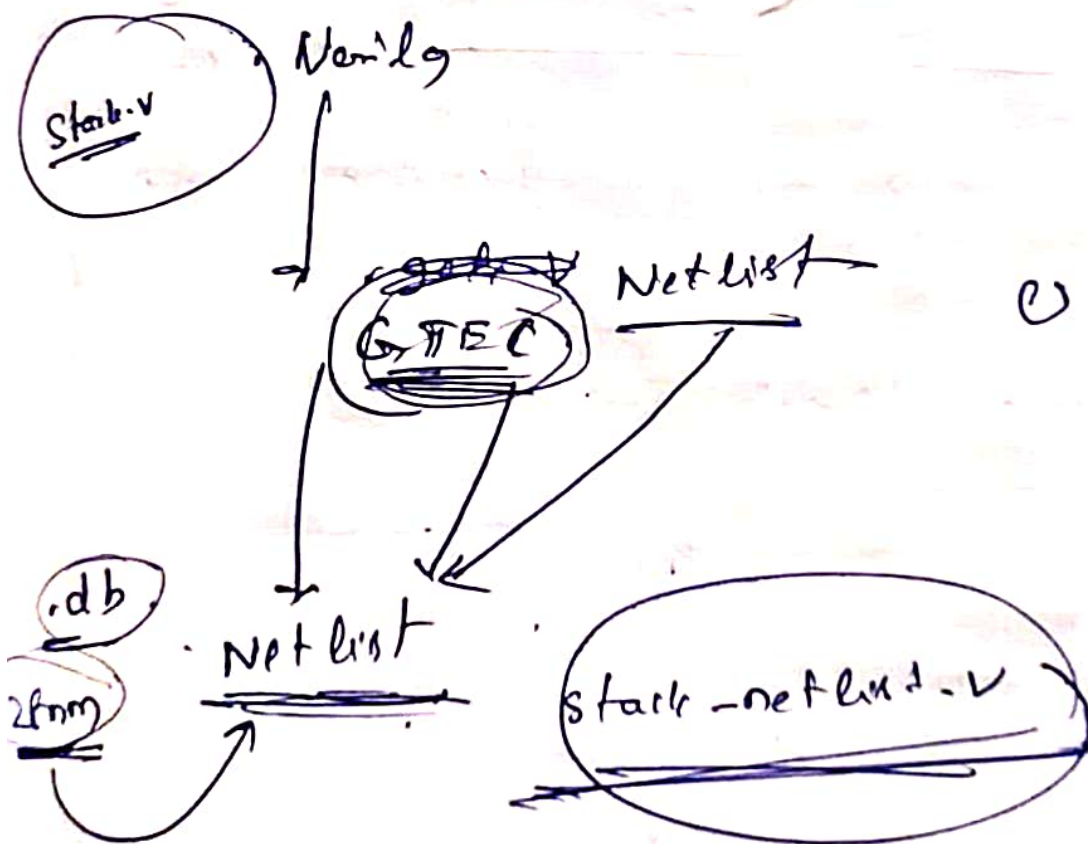
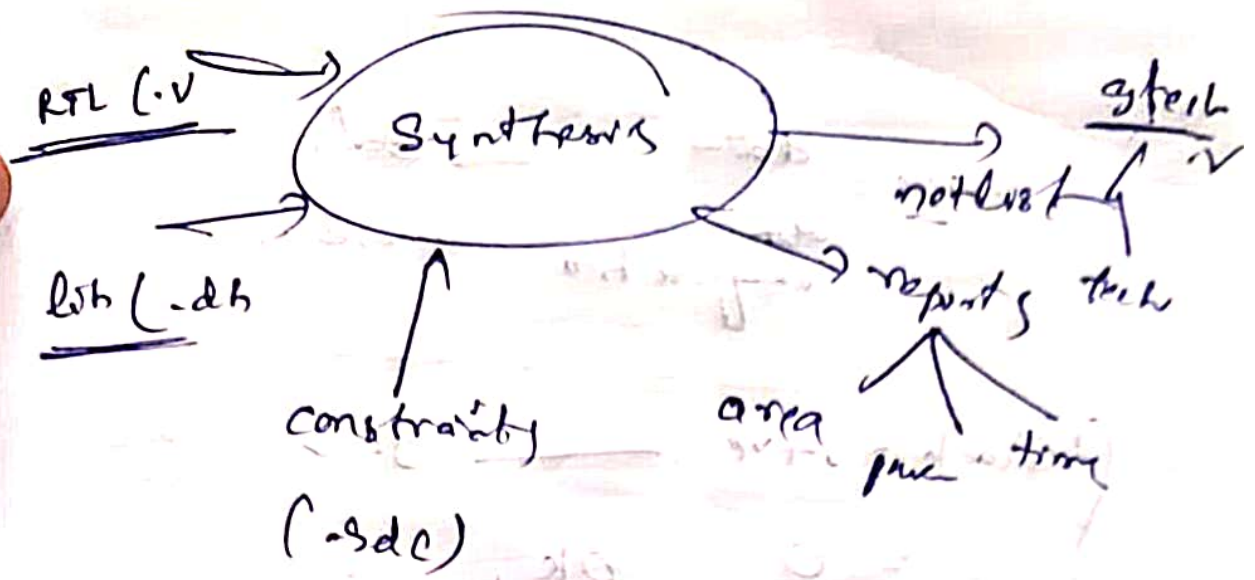
SS Op95V125C.db

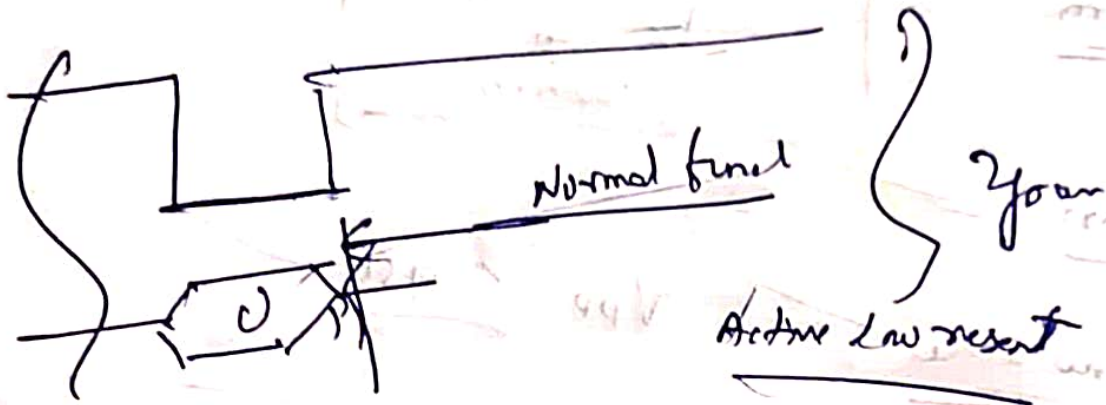
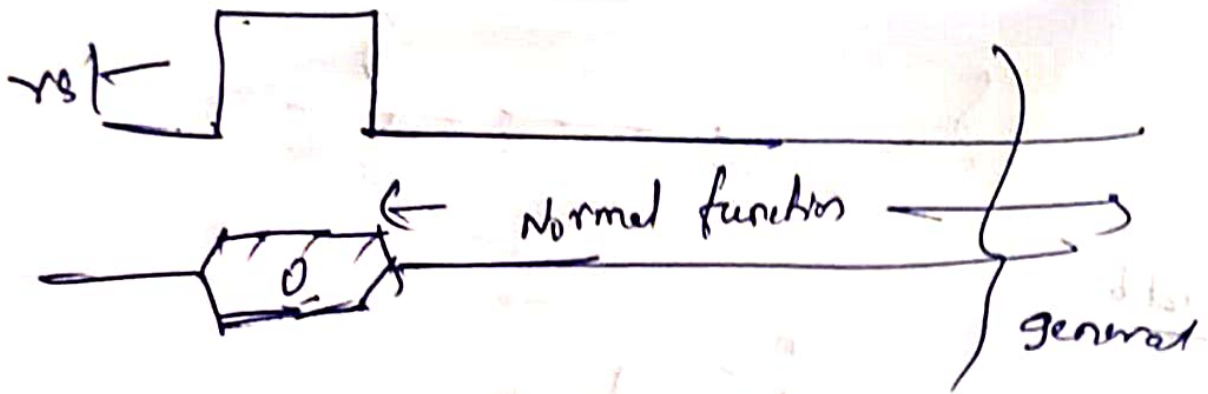
SS → slow slow

Op95 → 0.95

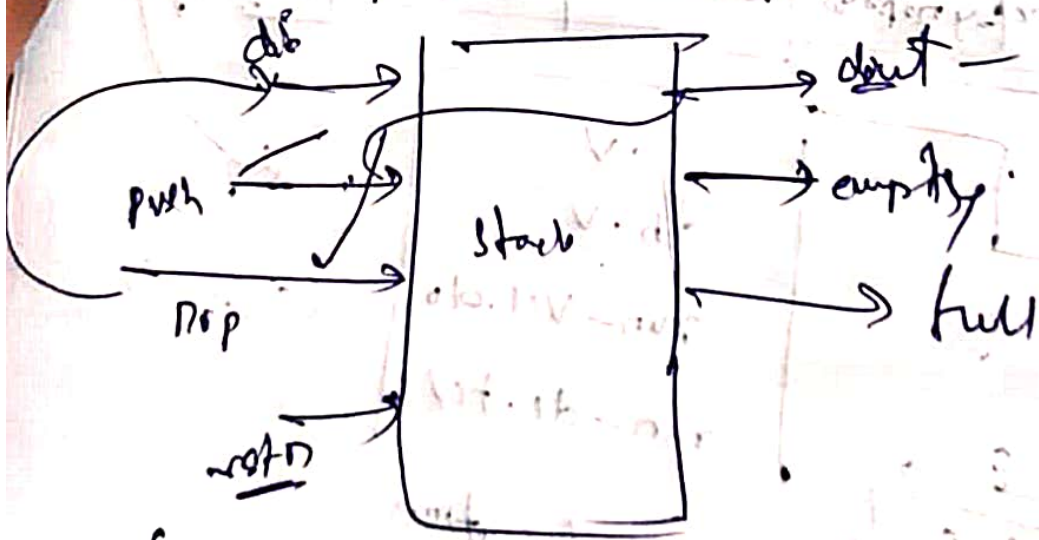
V → voltage

125C → temp.





push } only one at a time
pop



(data, push)

(data, pop)

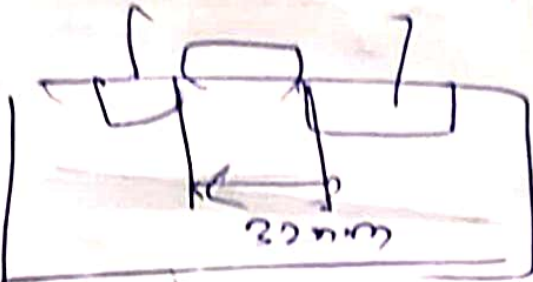
ls - rtr



idb

32nm

28nm



22nm

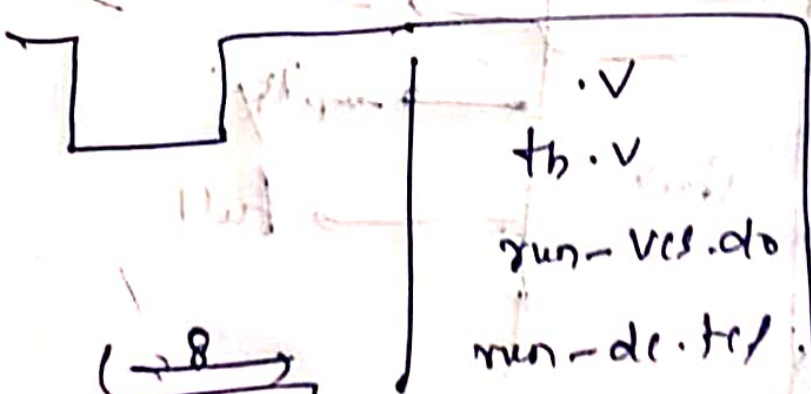
512x512

VDD = 0.95V

~~0.95~~ 0.95V

1280

/home/ynupys / students / deepthi / stack /

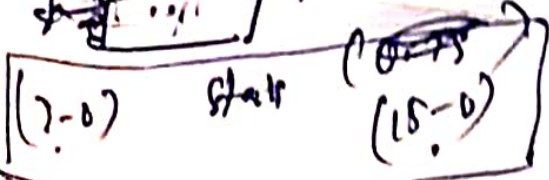


.v
th.v
run - ves.do
run - de.tel

0 ()



16 location
each location 8 bit



(7-0)

Stack

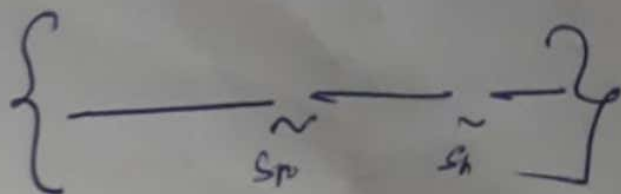
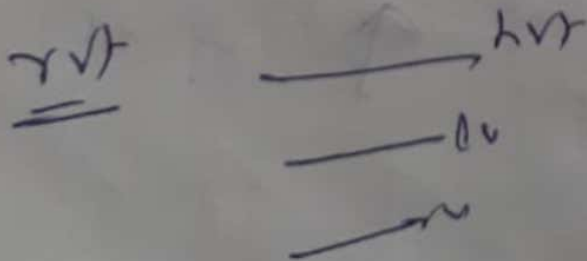
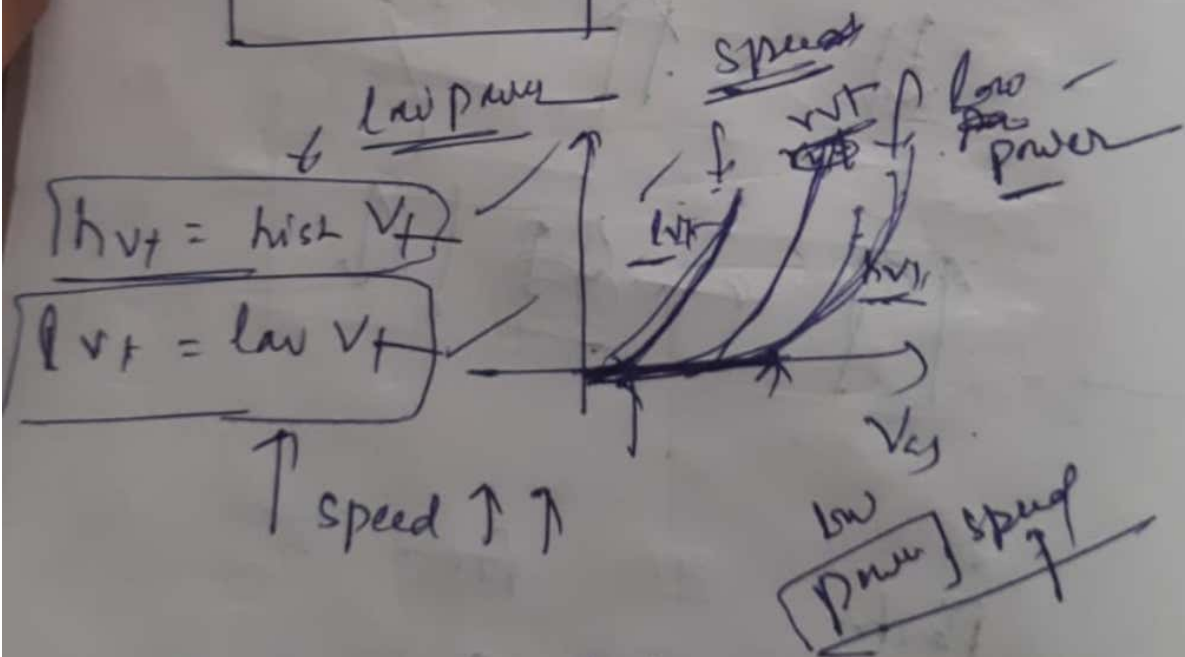
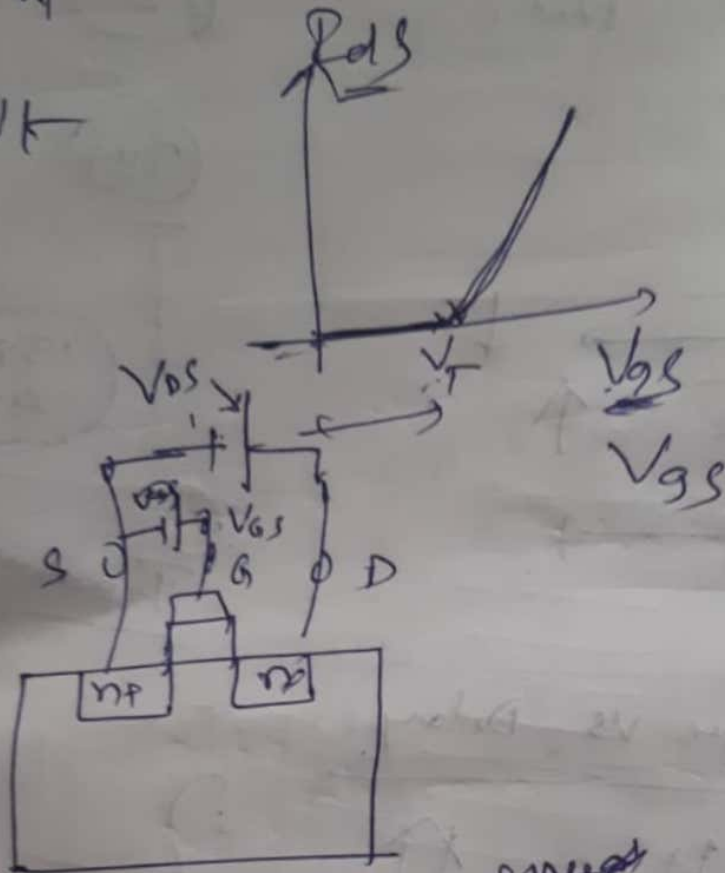
(15-0)


hvt

V_t = Threshold potential

rvt

lvvt



 Dyn —
static

(22)

(309)

PPA

✓ Power → ↓
Performance ↑
Area → ↓

(1396
line 2)

Trade-off

Power vs Delay



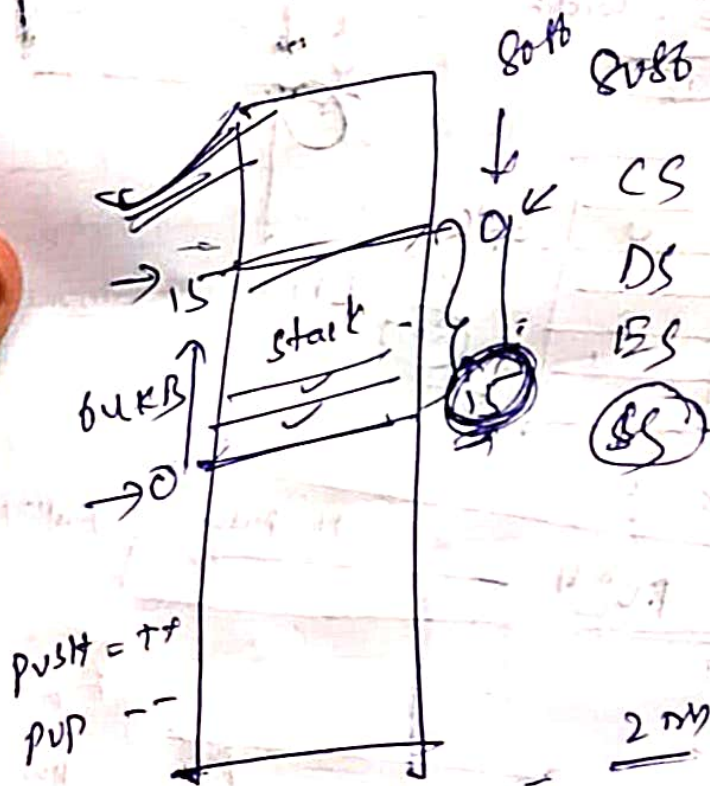
Power

Area

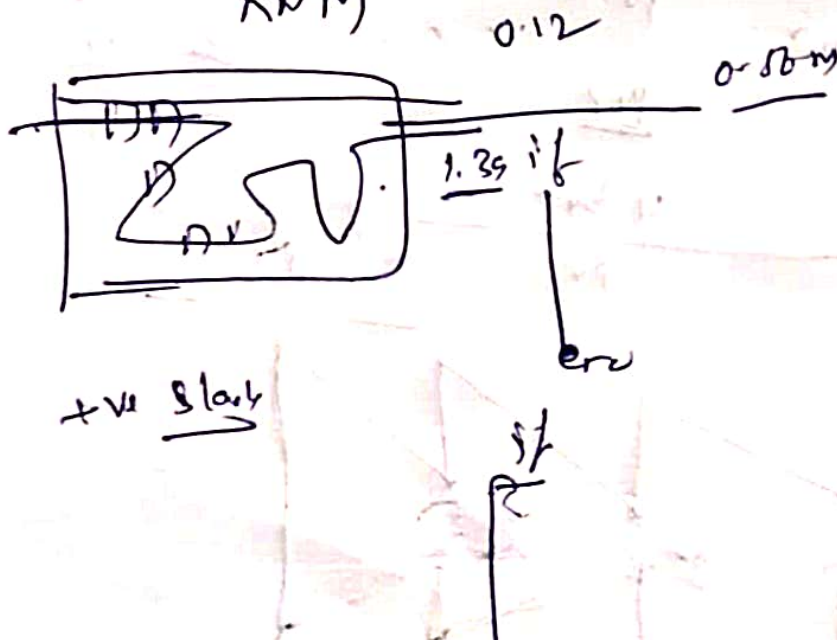


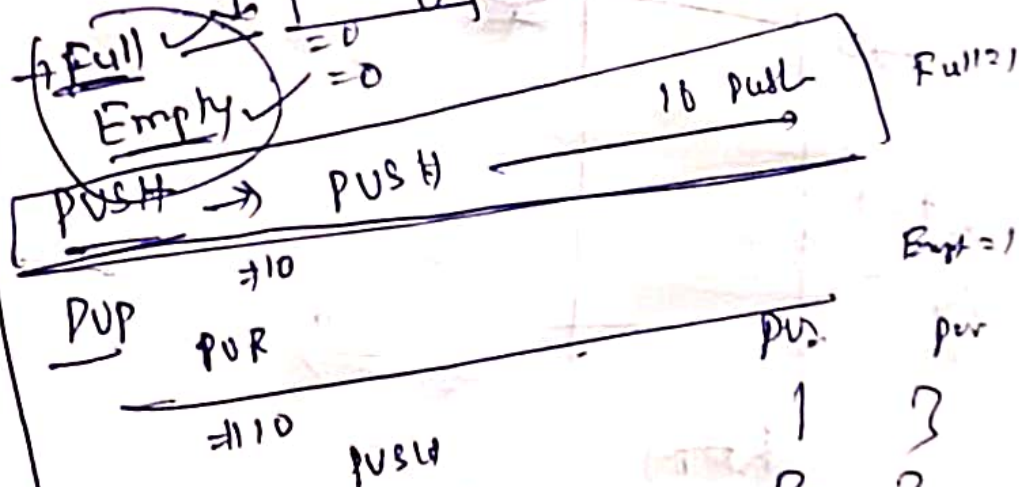
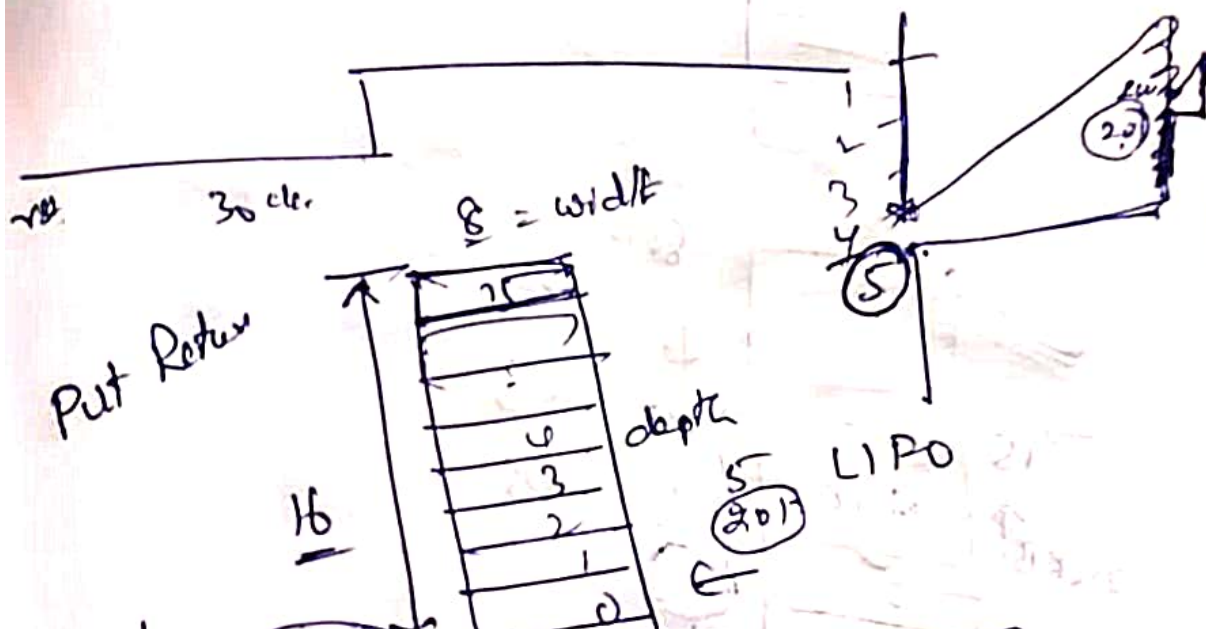
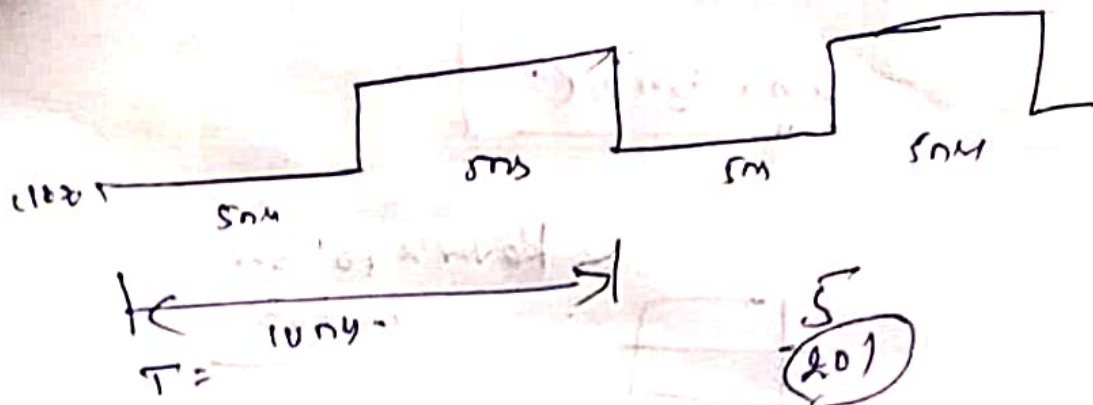
$$a_n + b_n^2 + c_n$$

Reverse Polish Notation



RAM



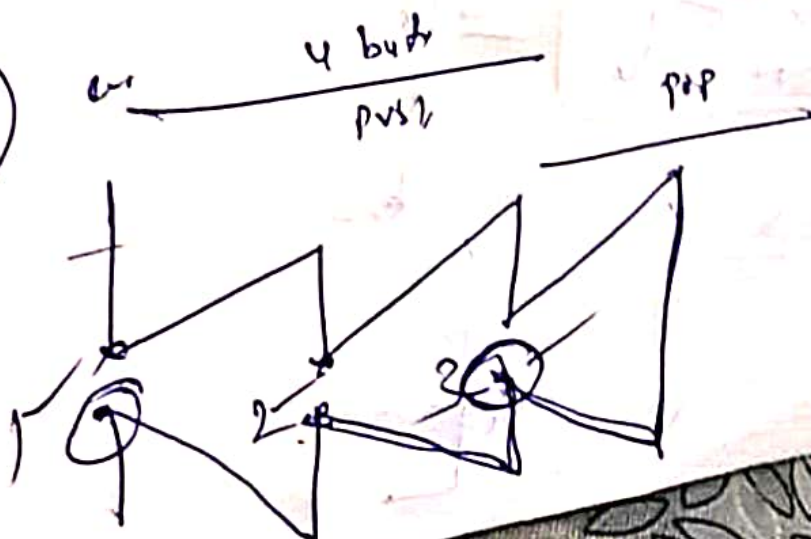


repeat (10)

POP

pus	pur
1	3
2	2
3	1

$E = 0$
Run > 0



Stack = data data
~~arr~~ negative for arrived to

Stack 2 +ve \longrightarrow going
= 0 ok.
= -ve (not ok)

<u>28/32nm</u>	Power		Area	slack
	static	Dynai		
clk = 5nm	24.5192	26556 E+07	1434.814 μm^2	2.96
clk = 2nm	62.5093 uW	2.7568 E+07W	1528.717 μm^2	0.74 μs
clk = 1nm	125.3658	4.42 06E+07 PW	1538.83 μm^2	0.01

14nm ✓

① run-de-fcl 32/28

② run-de 14.tcl

14.

	Power		Area	slack.
	static	Dynai		
clk = 5nm	2.8011	3.1817E+05 PW	296.0767.	3.79 μs
clk = 2nm	7.0044 uW	3.1831E+05 PW	296.076 μm^2	0.880 μs
clk = 1nm	14.1018 uW	3.3517E+05 PW	307.222 μm^2	0.24 μs