

ECEN 454

LAB 2

NAME: Jason Gilman

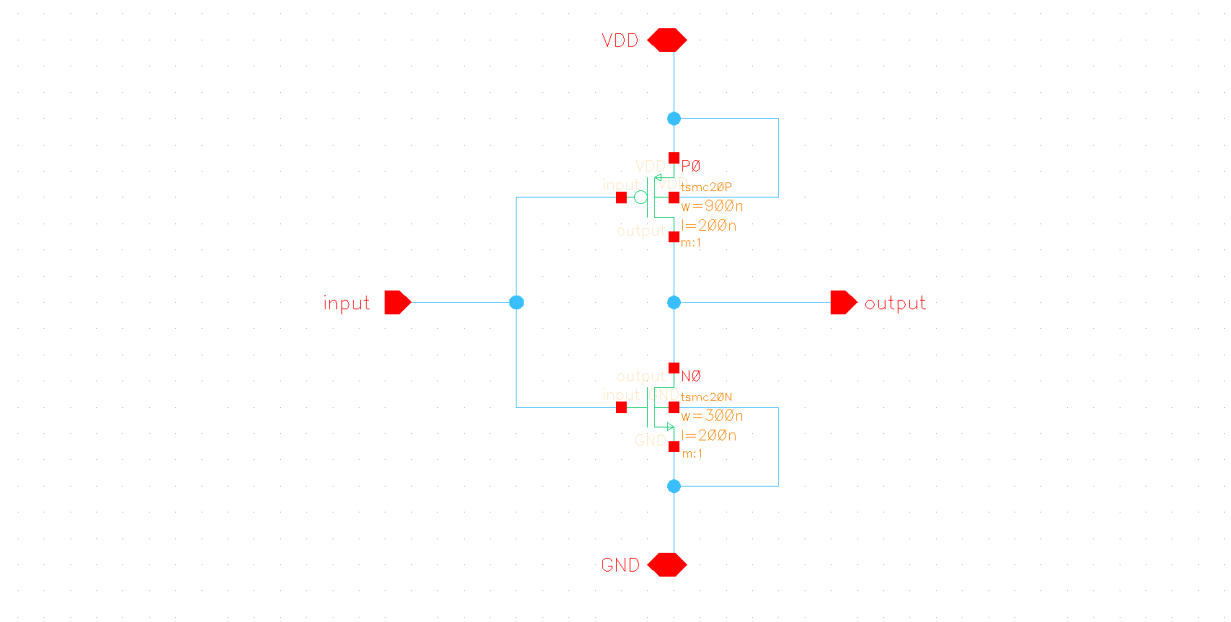
UIN: 126006979

SECTION: 511

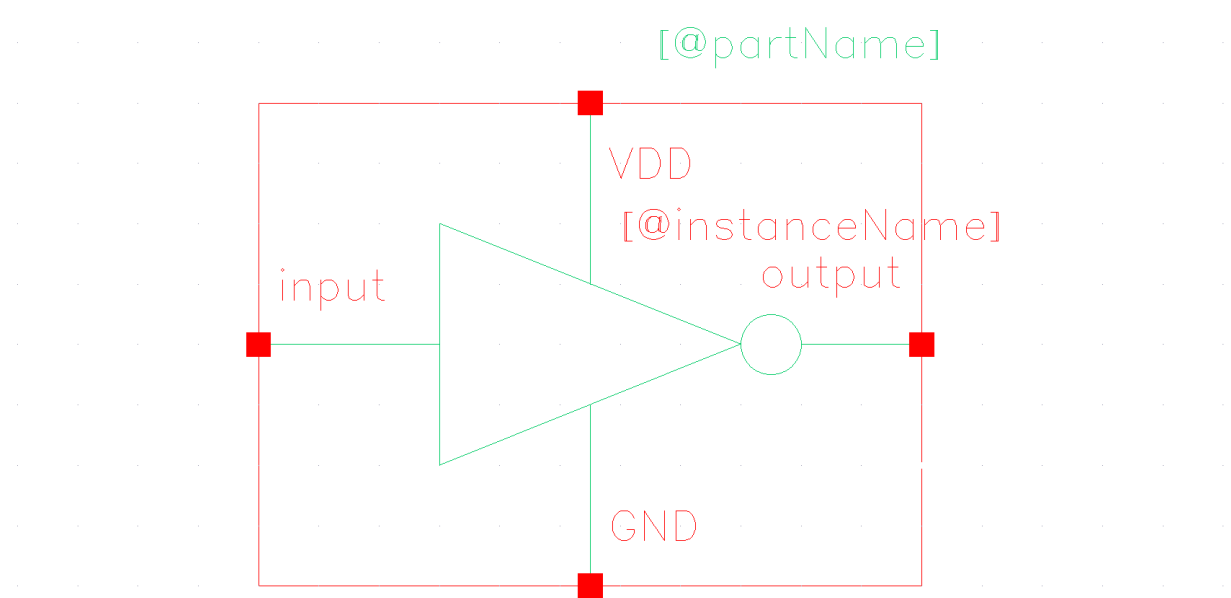
TA: Guaynu Gao

INVERTER

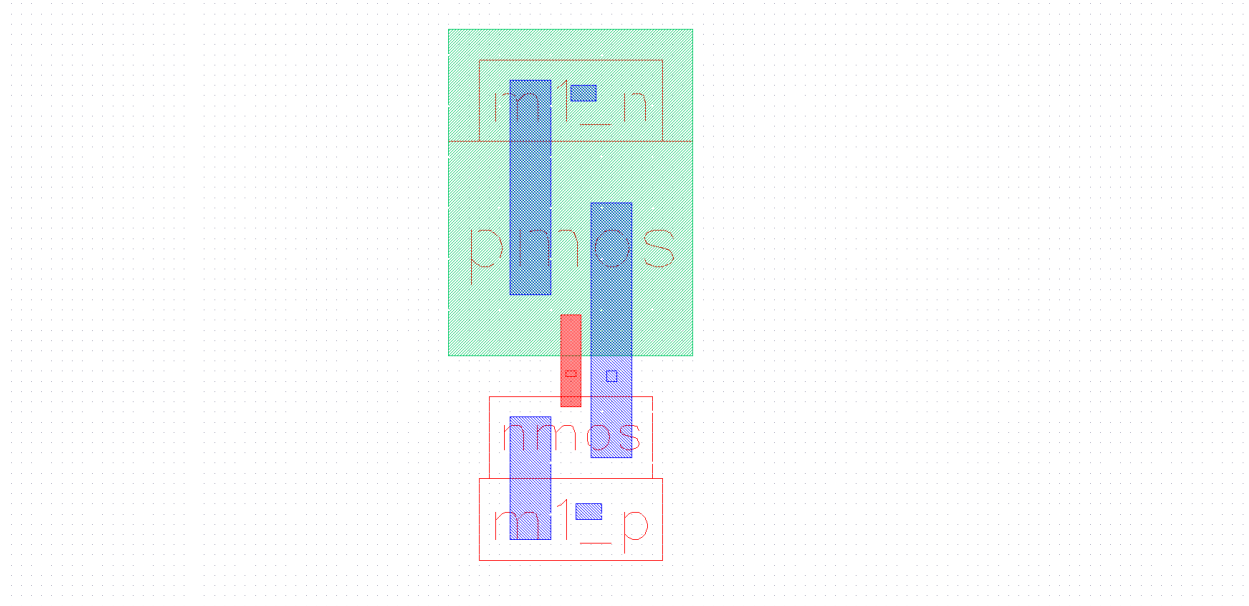
Schematic - inverter



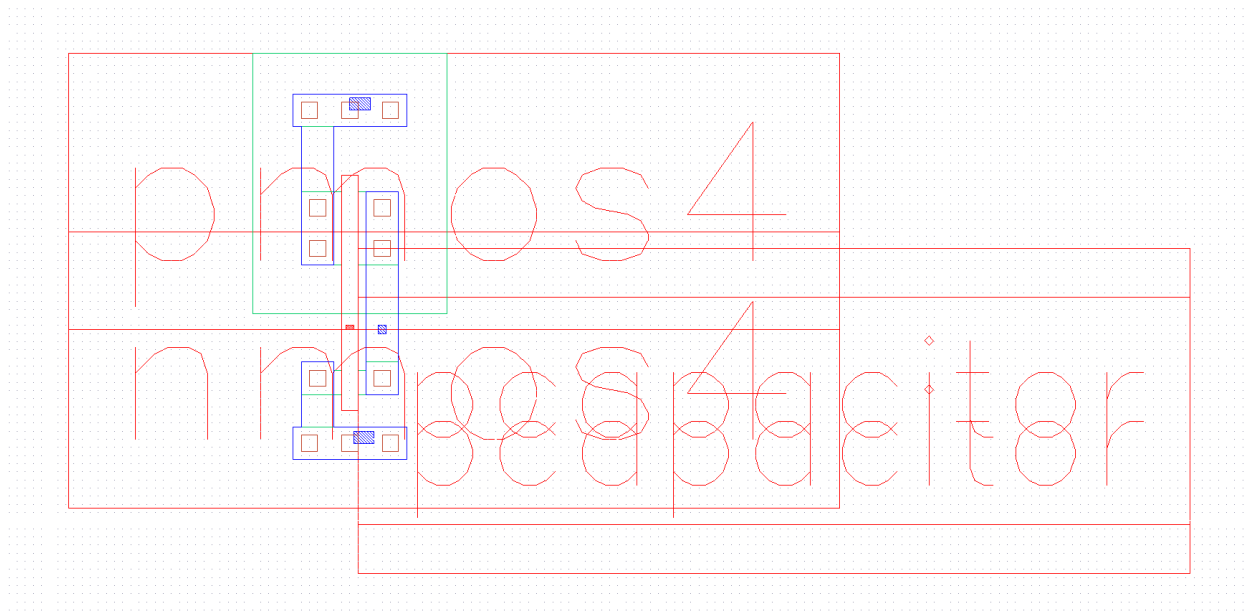
Symbol - inverter



Layout – inverter



Extracted – inverter



LVS Output – inverter

```
inverter_output - Notepad
File Edit Format View Help
@(#) $CDS: LVS version 6.1.8-64b 08/04/2020 19:19 (cpgsrv11) $

Command line: /opt/coe/cadence/IC618/tools.lnx86/dfII/bin/64bit/LVS -dir /home/ugrads/j/jasongilman/ecen454/LVS -l -s -t /home/ugrads/j/jasongilman/ecen454/LVS/layout/netlist
Like matching is enabled.
Net swapping is enabled.
Using terminal names as correspondence points.
Compiling Diva LVS rules...

Net-list summary for /home/ugrads/j/jasongilman/ecen454/LVS/layout/netlist
count
4      nets
4      terminals
1      pmos
1      nmos

Net-list summary for /home/ugrads/j/jasongilman/ecen454/LVS/schematic/netlist
count
4      nets
4      terminals
1      pmos
1      nmos

Terminal correspondence points
N1      N1      GND
N3      N2      VDD
N2      N3      input
N0      N0      output

Devices in the netlist but not in the rules:
pcapacitor
Devices in the rules but not in the netlist:
cap nfet pfet nmos4 pmos4

The net-lists match.

              layout schematic
              instances
un-matched    0      0
rewired       0      0
size errors   0      0
pruned        0      0
active        2      2
total         2      2

              nets
un-matched    0      0
merged        0      0
pruned        0      0
active        4      4
total         4      4

              terminals
```

```
inverter_output - Notepad
File Edit Format View Help

rewired          0      0
size errors      0      0
pruned           0      0
active           2      2
total            2      2

                                nets
un-matched       0      0
merged           0      0
pruned           0      0
active           4      4
total            4      4

                                terminals
un-matched       0      0
matched but
different type    0      0
total            4      4

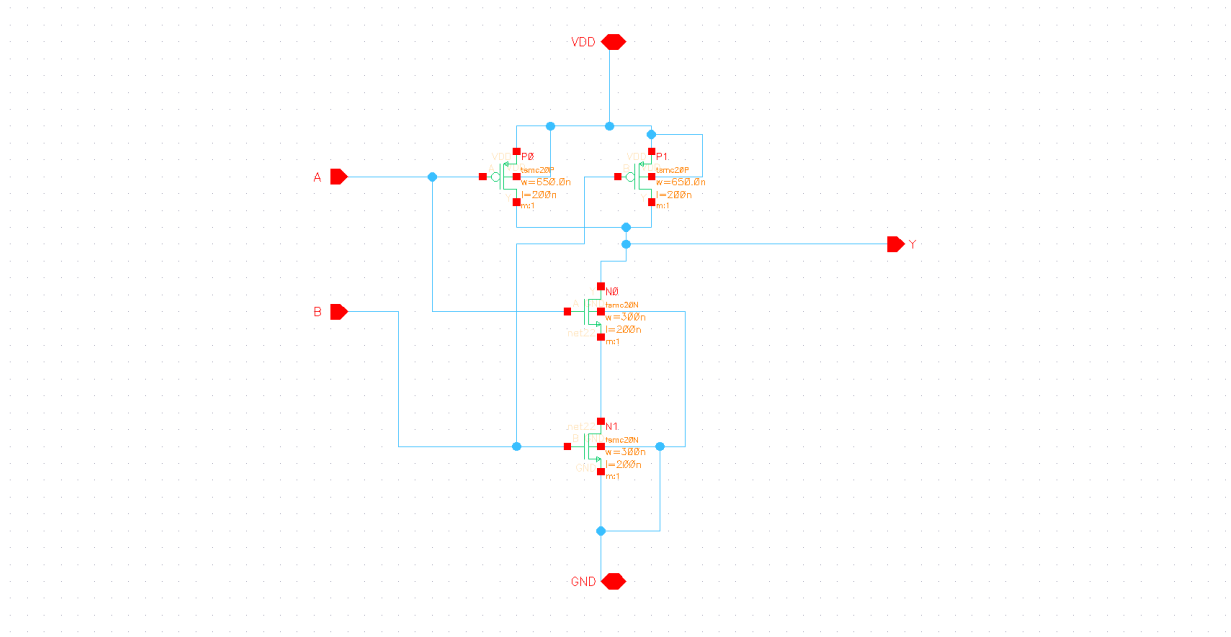
Probe files from /home/ugrads/j/jasongilman/ecen454/LVS/schematic
devbad.out:
netbad.out:
mergenet.out:
termbad.out:
prunenet.out:
prunedev.out:
audit.out:

Probe files from /home/ugrads/j/jasongilman/ecen454/LVS/layout
devbad.out:
netbad.out:
mergenet.out:
termbad.out:
prunenet.out:
prunedev.out:
audit.out:
<
```

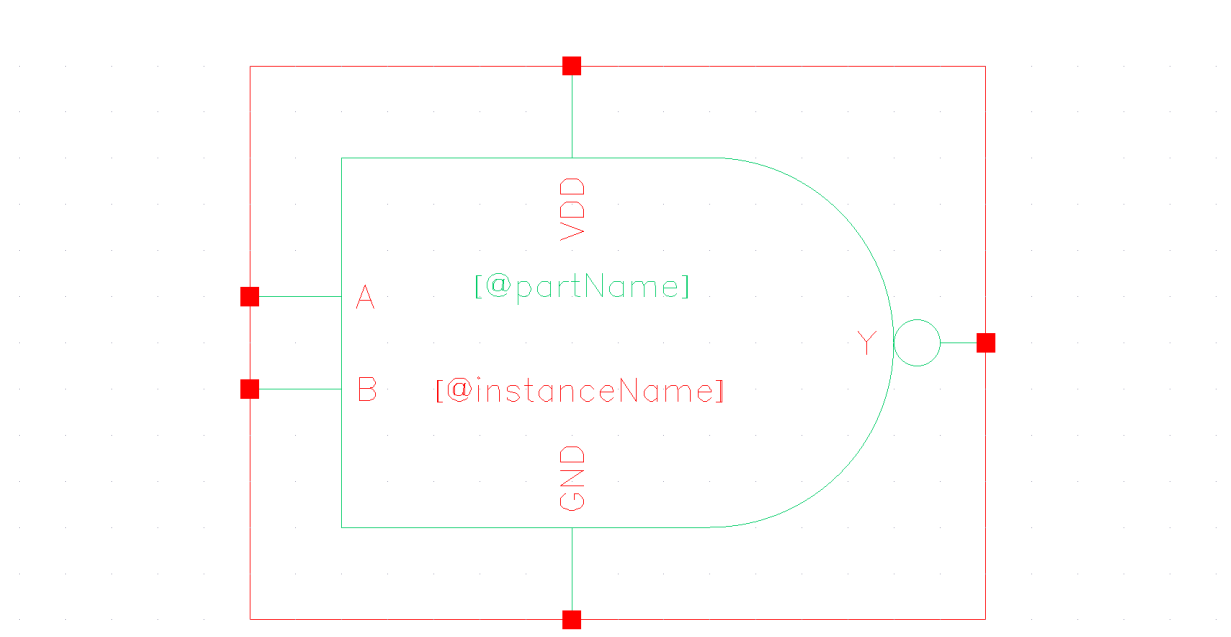
NAND

Schematic – nand

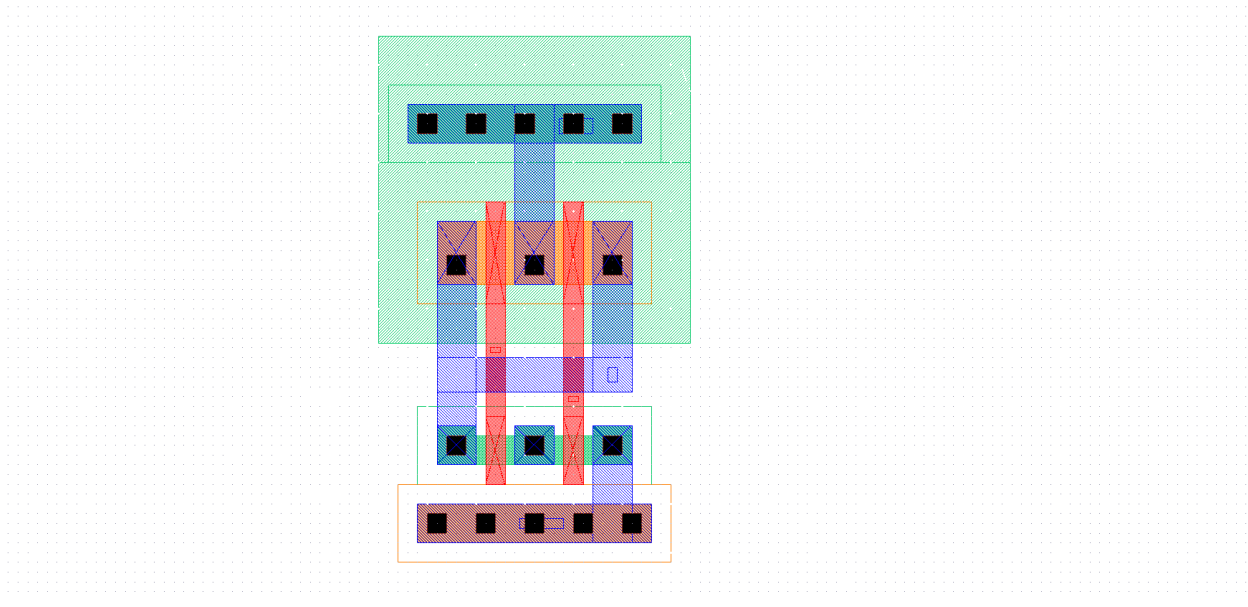
Sybol



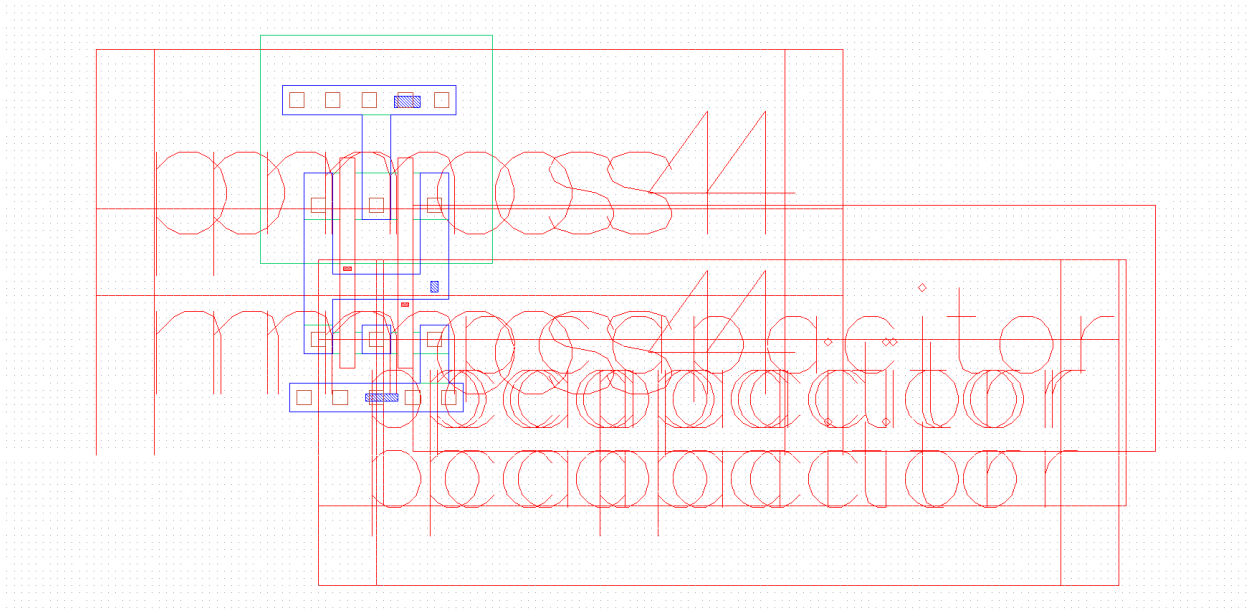
Symbol – nand



Layout – nand



Extracted – nand



LSV Output – nand

```
nand_output - Notepad
File Edit Format View Help
b(#)$CDS: LVS version 6.1.8-64b 08/04/2020 19:19 (cpgsrv11) $

Command line: /opt/coe/cadence/IC618/tools.lnx86/dfII/bin/64bit/LVS -dir /home/ugrads/j/jasongilman/ecen454/LVS -l -s -t /h
Like matching is enabled.
Net swapping is enabled.
Using terminal names as correspondence points.
Compiling Diva LVS rules...

Net-list summary for /home/ugrads/j/jasongilman/ecen454/LVS/layout/netlist
count
6          nets
5          terminals
2          pmos
2          nmos

Net-list summary for /home/ugrads/j/jasongilman/ecen454/LVS/schematic/netlist
count
6          nets
5          terminals
2          pmos
2          nmos

Terminal correspondence points
N4      N4      A
N3      N0      B
N2      N5      GND
N5      N3      VDD
N1      N1      Y

Devices in the netlist but not in the rules:
pcapacitor
Devices in the rules but not in the netlist:
cap nfet pfet nmos4 pmos4

The net-lists match.

                                layout schematic
                                instances
un-matched                      0      0
rewired                         0      0
size errors                     0      0
pruned                          0      0
active                          4      4
total                           4      4

                                nets
un-matched                      0      0
merged                         0      0
pruned                         0      0
active                         6      6
total                           6      6
```



```
nand_output - Notepad
File Edit Format View Help

rewired          0      0
size errors      0      0
pruned           0      0
active           4      4
total            4      4

                                nets
un-matched       0      0
merged           0      0
pruned           0      0
active           6      6
total            6      6

                                terminals
un-matched       0      0
matched but
different type    0      0
total            5      5

Probe files from /home/ugrads/j/jasongilman/ecen454/LVS/schematic

devbad.out:

netbad.out:

mergenet.out:

termbad.out:

prunenet.out:

prunedev.out:

audit.out:

Probe files from /home/ugrads/j/jasongilman/ecen454/LVS/layout

devbad.out:

netbad.out:

mergenet.out:

termbad.out:

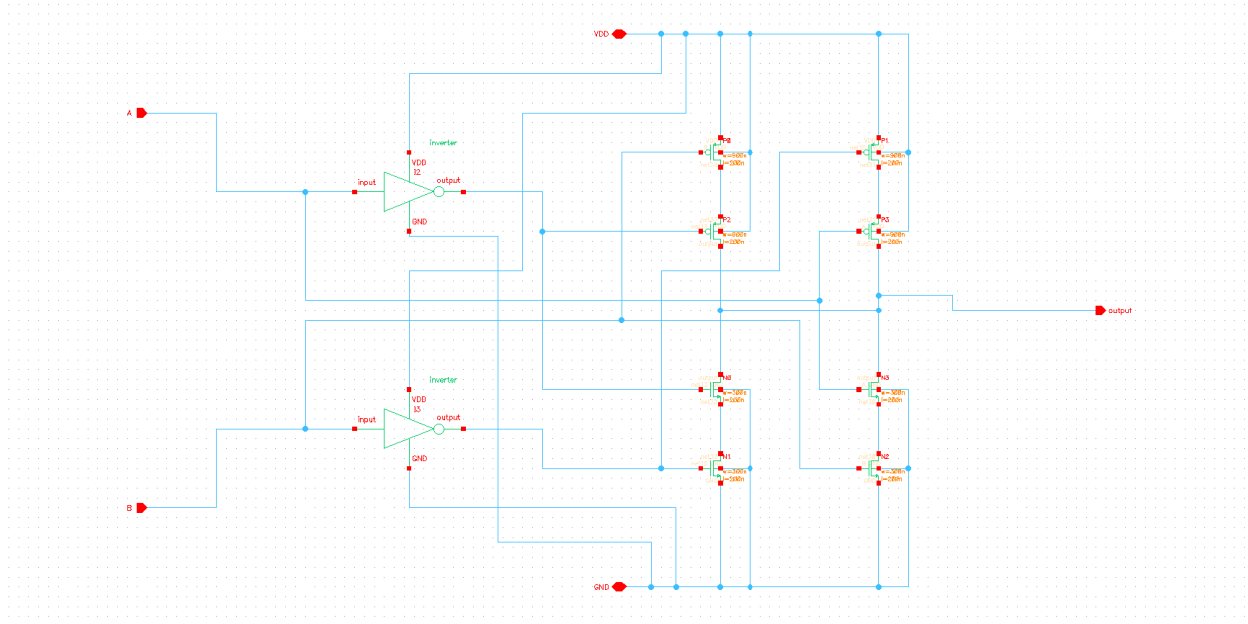
prunenet.out:

prunedev.out:

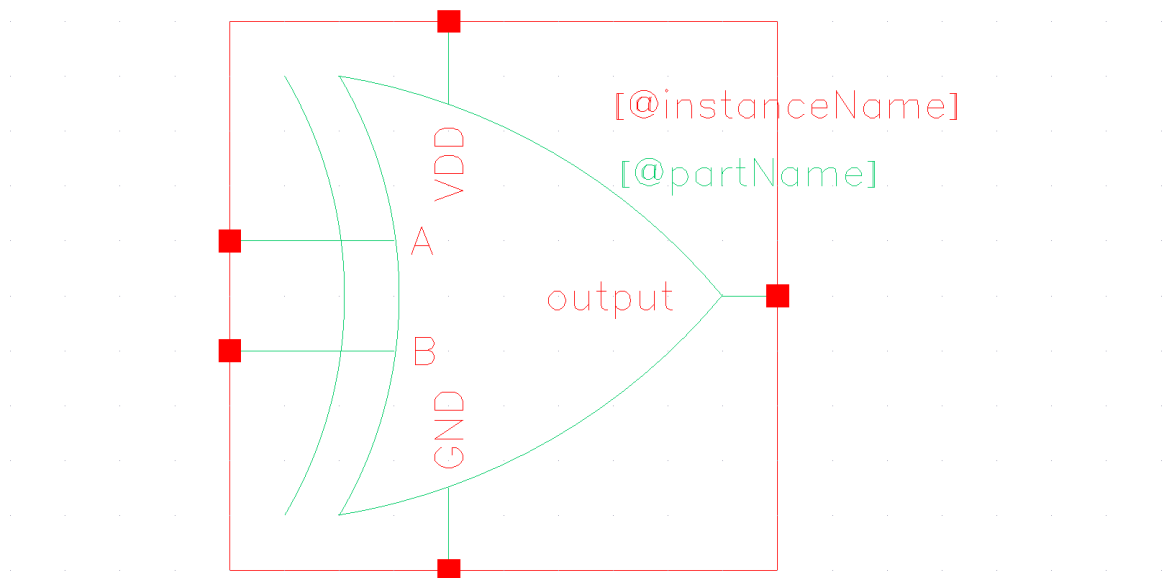
audit.out:
```

XOR

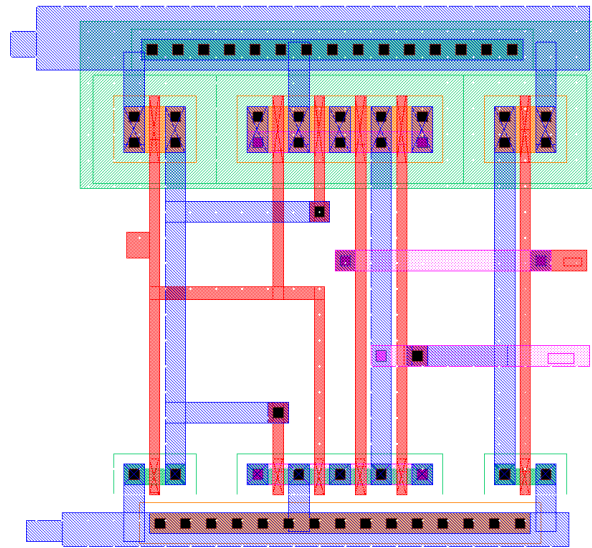
Schematic – xor



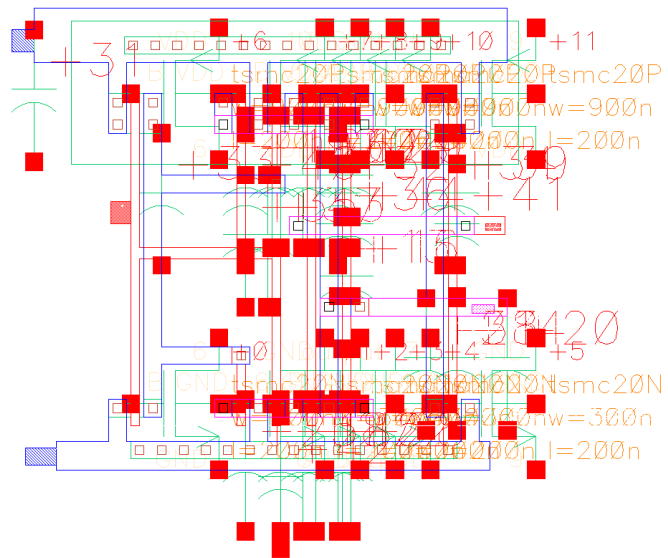
Symbol – xor



Layout – xor



Extracted – xor



LSV Output – xor

```
xor_output - Notepad
File Edit Format View Help
@(#)CDS: LVS version 6.1.8-64b 08/04/2020 19:19 (cpgsrv11) $

Command line: /opt/coe/cadence/IC618/tools.lnx86/dfII/bin/64bit/LVS -dir /home/ugrads/j/jasongilman/ecen454/LVS -l -s -t /
Like matching is enabled.
Net swapping is enabled.
Using terminal names as correspondence points.
Compiling Diva LVS rules...

Net-list summary for /home/ugrads/j/jasongilman/ecen454/LVS/layout/netlist
count
11      nets
5       terminals
6       pmos
6       nmos

Net-list summary for /home/ugrads/j/jasongilman/ecen454/LVS/schematic/netlist
count
11      nets
5       terminals
6       pmos
6       nmos

Terminal correspondence points
N9      N2      A
N8      N9      B
N7      N4      GND
N10     N10     VDD
N6      N6      output

Devices in the netlist but not in the rules:
pcapacitor
Devices in the rules but not in the netlist:
cap nfet pfet nmos4 pmos4

The net-lists match.

              layout schematic
              instances
un-matched    0      0
rewired       0      0
size errors   0      0
pruned        0      0
active        12     12
total         12     12

              nets
un-matched    0      0
merged        0      0
pruned        0      0
active        11     11
total         11     11
```

```
xor_output - Notepad
File Edit Format View Help

rewired          0      0
size errors      0      0
pruned           0      0
active           12     12
total            12     12

                                nets
un-matched       0      0
merged           0      0
pruned           0      0
active           11     11
total            11     11

                                terminals
un-matched       0      0
matched but
different type    0      0
total            5      5

Probe files from /home/ugrads/j/jasongilman/ecen454/LVS/schematic

devbad.out:

netbad.out:

mergenet.out:

termbad.out:

prunenet.out:

prunedev.out:

audit.out:

Probe files from /home/ugrads/j/jasongilman/ecen454/LVS/layout

devbad.out:

netbad.out:

mergenet.out:

termbad.out:

prunenet.out:

prunedev.out:

audit.out:
```

