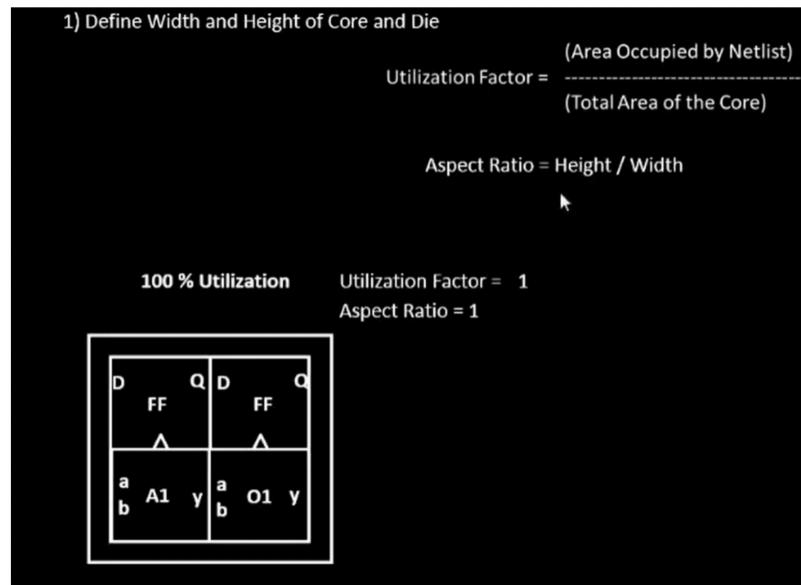


# Day 2

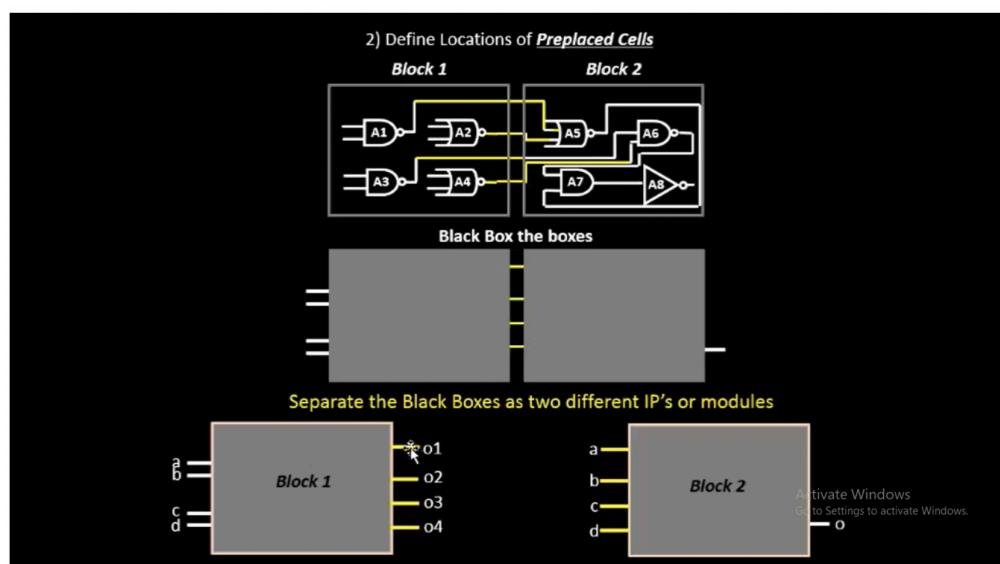
## Utilization factor and aspect Ratio

Utilization factor = the area occupied by the netlist / total area of the core  
Aspect Ratio = Height / width



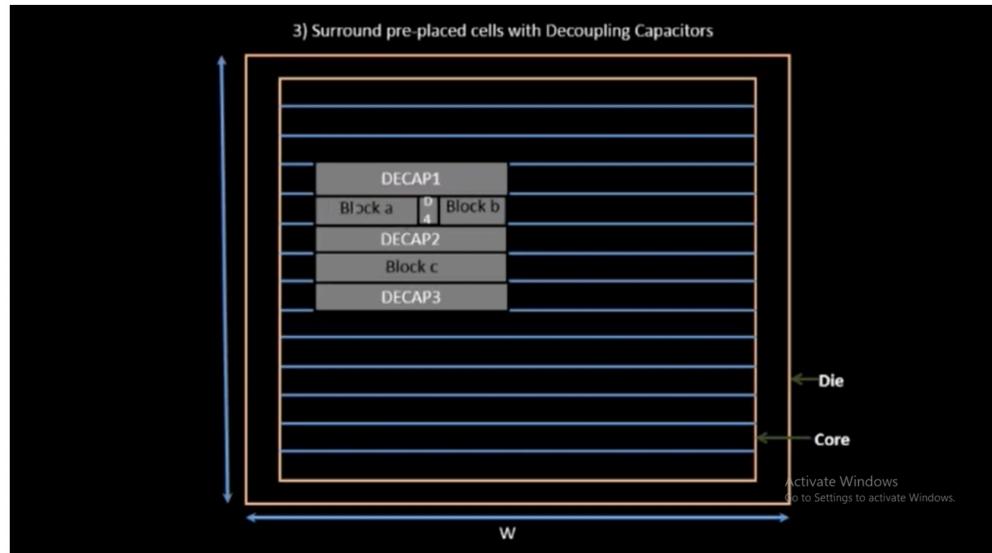
## Preplaced Cells

The combinational logic can be separated into separate blocks which can operate as individual units. Advantage of doing this is that we can reuse them multiple times after implementing once only.



# Decoupling Capacitors

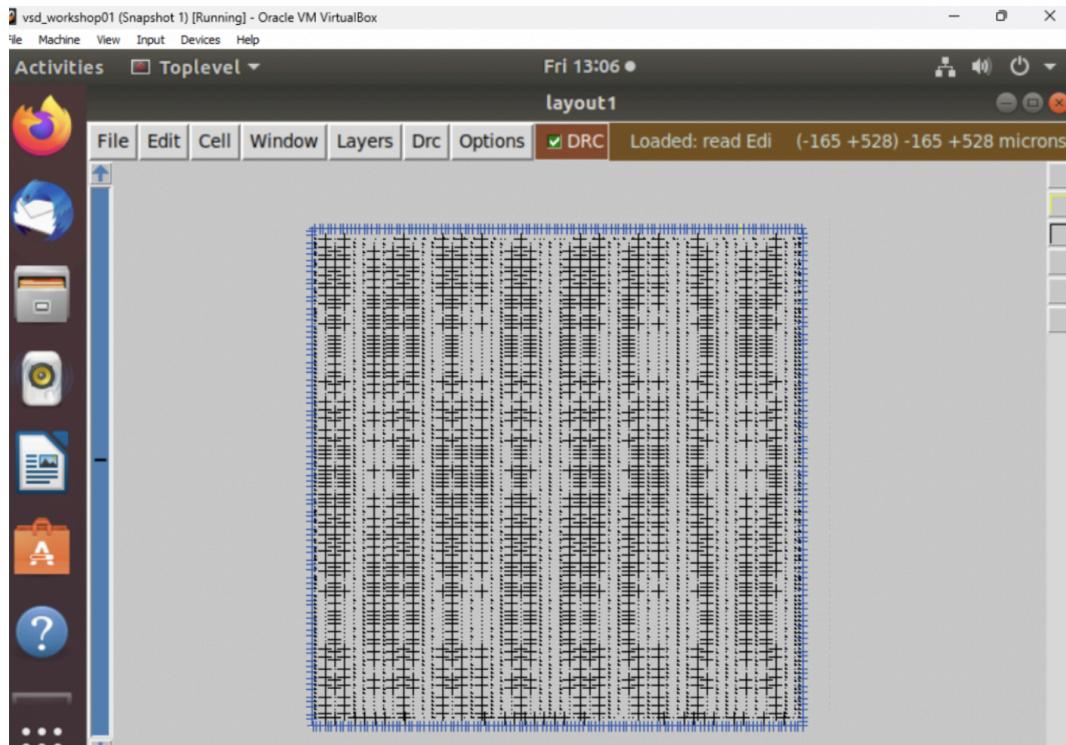
Decoupling capacitors are used in parallel with the circuit to provide current in order to deal with the problem of voltage dissipation from drawing current directly through the power supply line.



## Day 2 Lab:

### 1. run\_floorplan

```
vsd_user@vsdsquadron [Snapshot 1] [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Fri 13:08 •
vsd_user@vsdsquadron: ~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results$ cd floorplan
total 36
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:55 routing
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:55 magic
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:55 lvs
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:55 klayout
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:55 cvc
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:55 cts
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:56 floorplan
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:56 synthesis
drwxr-xr-x 2 vsd_user vsd_user 4096 Aug 16 12:57 placement
vsd_user@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results$ cd floorplan
vsd_user@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/floorplan$ magic -T /Desktop/work/tools/openlane_working_dir/pdk/sky130A/libs.tech lef read ../../tmp/merged.lef def read picorv32a.floorplan.def &
[1] 10749
vsd_user@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/floorplan$ date
Fri Aug 16 13:07:59 IST 2024
[1]+ Done magic -T /Desktop/work/tools/openlane_working_dir/pdk/sky130A/libs.tech lef read ../../tmp/merged.lef def read picorv32a.floorplan.def
vsd_user@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/floorplan$
```



## 2. run\_placement

```
vsduser@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/floorplan$ cd ..
vsduser@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results$ cd placement
vsduser@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/placement$ ls -ltr
total 3892
lrwxrwxrwx 1 vsduser vsduser      29 Aug 16 12:55 merged_unpadded.lef -> ../../tmp/merged_unpadded.lef
-rw-r--r-- 1 vsduser vsduser 3164924 Aug 16 12:56 picorv32a.placement.def
-rw-r--r-- 1 vsduser vsduser   816328 Aug 16 12:57 picorv32a.placement.def.png
vsduser@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/placement$ magic -T /Desktop/work/tools/openlane_working_dir/pdk/sky130A/libs.tech lef read ../../tmp/merged.lef def read picorv32a.placement.def &
[1] 10762
vsduser@vsdsquadron:~/Desktop/work/tools/openlane_working_dir/openlane/designs/picorv32a/runs/16-08_07-25/results/placement$
```

