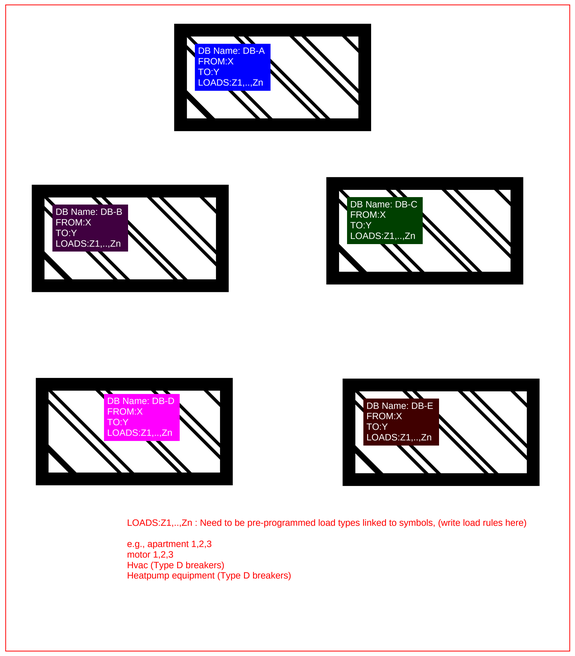
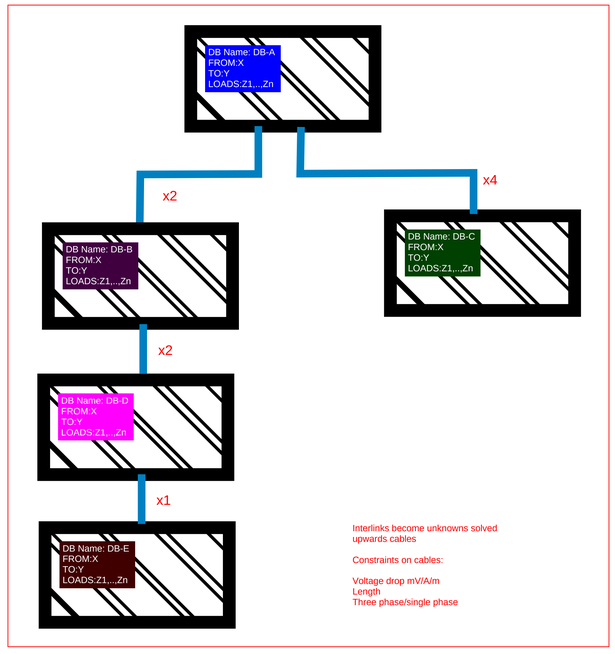
AutoSLD

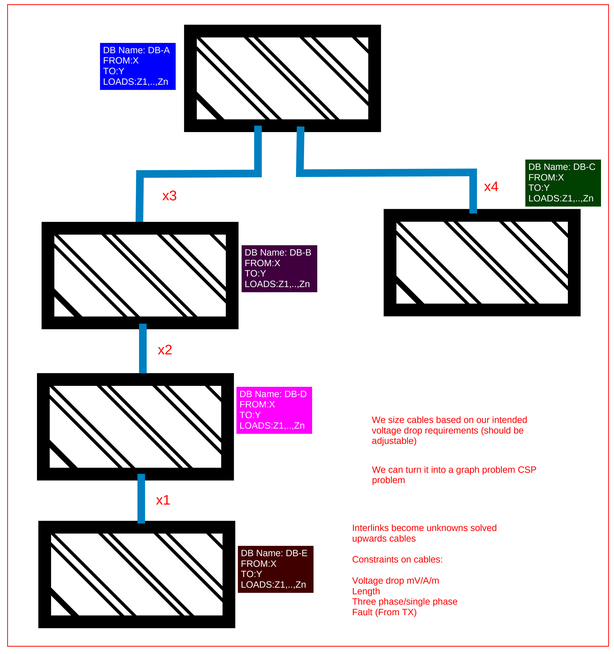
DB (Exported Random Order)

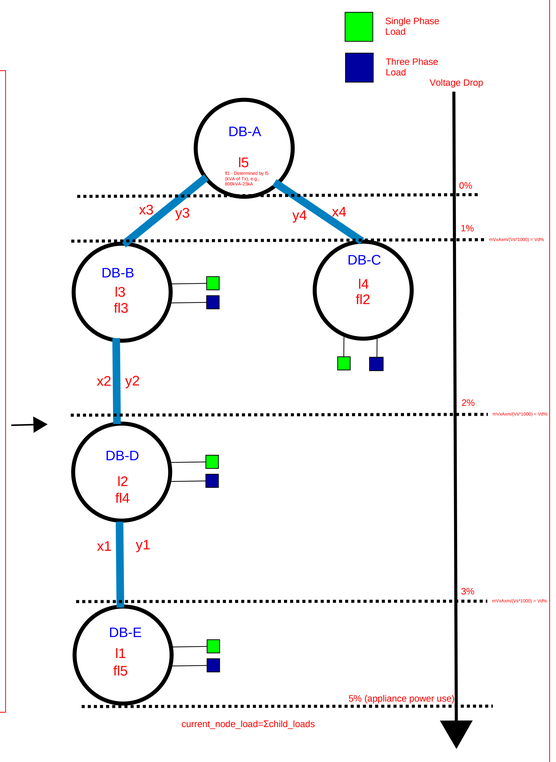


Create Hierachy from DB Schedules



Calculate DB equipment ratings and cable ratings





In: DB load
yn: cable length
ph: single or 3 phase based on required loads needing to be supplied

xn: cable type based on DB loading, cable length and if phasing - calculate optimal voltage drop from first principle

Voltage drop = mV × A × m

mVxAxm/(Vs*1000) = Vd%

fln: DB busbar fault rating (calculated based on cable volt drop rating)

```
def design_system():

#Allow for 1% volt drop from DB to appliances
for each node:
get node name
get fed from
calculate feeder load
calculate lengths between nodes <- Should I include appliances as nodes?
calculate desired volt drop based on maximum distance to appliance?
calculate cables (based on loads and desired volt drop)

#Allow for % volt drop from DB to FB based on the numbers of floors per building
define_graph
calculate node loads starting from lower hierachy (feeder load+DB loads)
calculate lengths between nodes <- Should I include appliances as nodes? (No-see if whole system can be solved at a later stage all at once)
calculate desired volt drop based on maximum distance to appliance?
calculate cables (based on loads and desired volt drop)
calculate node fault ratings

return design
```

I(fault) = S(kVA) x 100 / (1.732 x V(V) x %Z).

The %Z will lie between 4 to 10% (SANS 0-5% max)