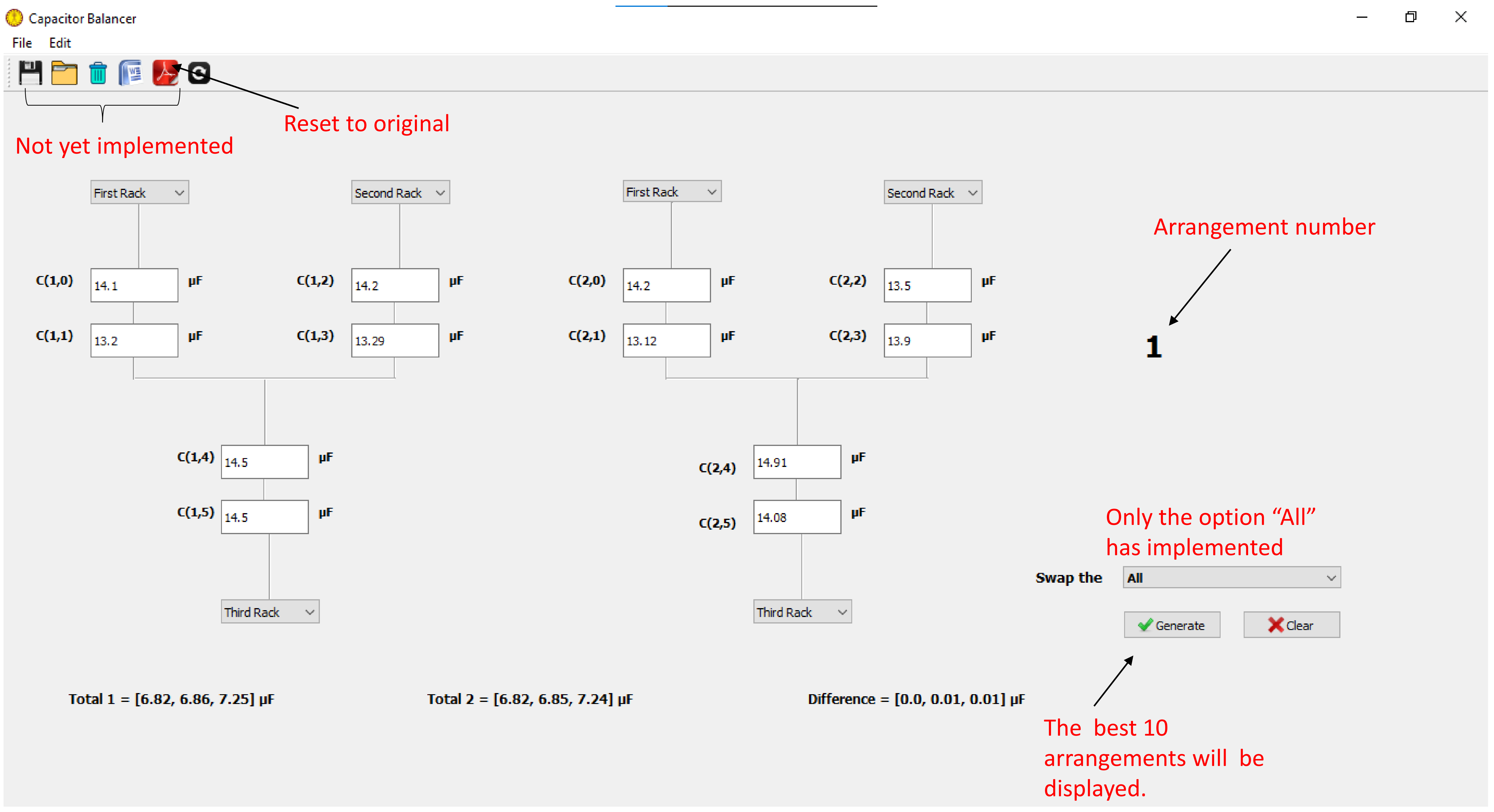
Read Me

Link to the setup

https://drive.google.com/drive/folders/19dOUECXcTrWk5c-C9TSBhUwdPM-eACEe?usp=sharing


Capacitor Balancer
File
Edit
Reset to original
Not yet implemented
First Rack
Second Rack
First Rack
Second Rack
Arrangement number
C(1,0)
14.1
μF
C(1,2)
14.2
μF
C(2,0)
14.2
μF
C(2,2)
13.5
μF
C(1,1)
13.2
μF
C(1,3)
13.29
μF
C(2,1)
13.12
μF
C(2,3)
13.9
μF
1
C(1,4)
14.5
μF
C(2,4)
14.91
μF
C(1,5)
14.5
μF
C(2,5)
14.08
μF
Only the option "All" has implemented
Swap the
All
Third Rack
Third Rack
Generate
Clear
Total 1 = [6.82, 6.86, 7.25] μF
Total 2 = [6.82, 6.85, 7.24] μF
Difference = [0.0, 0.01, 0.01] μF
The best 10 arrangements will be displayed.

Functionality

- Fill the C(1,0) to C(2,5) with capacitor values
- Click “Generate”

    best 10 combinations will be displayed on the same window

- Click on reset to “restore” the original arrangement
- The tool still not showing the optimum solution (optimum means the arrangement we can obtain from lesser number of shuffles. But it shows the **best*** arrangement)

Algorithm

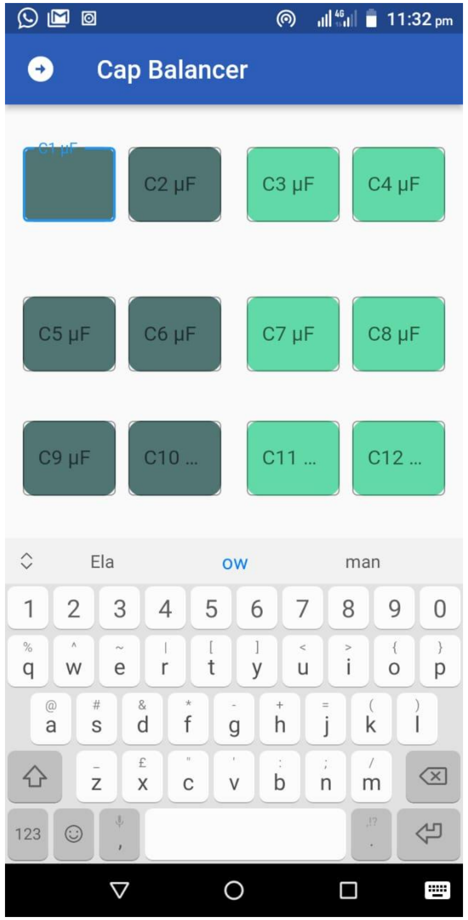
$$C_{11} = \frac{C(1{,}0) \times C(1{,}1)}{C(1{,}0) + C(1{,}1)}$$

Capacitors are shuffled such a way that $C_{11} \cong C_{21}$, $C_{12} \cong C_{21}$ and $C_{13} \cong C_{23}$

$$Cost = (C_{11} - C_{21}) + (C_{12} - C_{22}) + (C_{13} - C_{23})$$

This cost is minimized by shuffling the capacitors, hence obtain the best arrangement.

Mobile app



Still under development