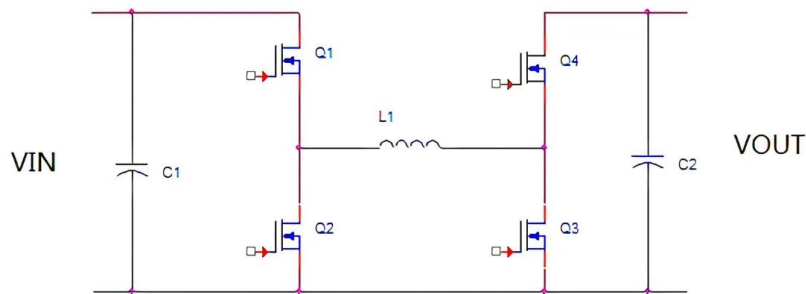# For super Capacitor Weekly report (Week 2)

This week, the schematic circuit of Super capacitor was learned, and in this project, Buck-Boost Circuit can be applied, as it can both accomplish buck circuit and boost circuit.

Preferred Option:

Power source ‖ Chassis motor ↔ Bidirectional controllable power module ↔ Supercapacitor

Buck-Boost Circuit:

$$\frac{V_{left}}{V_{right}} = \frac{D_{right}}{D_{left}}$$

For parameter:
Inductance:

$$L_{buck} > \left(\frac{V_{out}}{\Delta I \cdot f}(1-D)\right)_{max} \quad and \quad L_{boost} > \left(\frac{V_{in}}{\Delta I \cdot f}(1-D)\right)_{max}$$

Capacitor:

$$C_{buck} > \frac{\Delta I}{8 \cdot f \cdot \Delta V_{out}} \quad and \quad C_{boosts} > \frac{\Delta I}{8 \cdot f \cdot \Delta V_{in}}$$

Connection of Super capacitor:
In order to prevent the charging process due to the different capacitance constitution, so that: some nodes are not full, other capacitors have exceeded the voltage, the use of equalization circuit, capacitor groups can be connected in parallel and then in series.