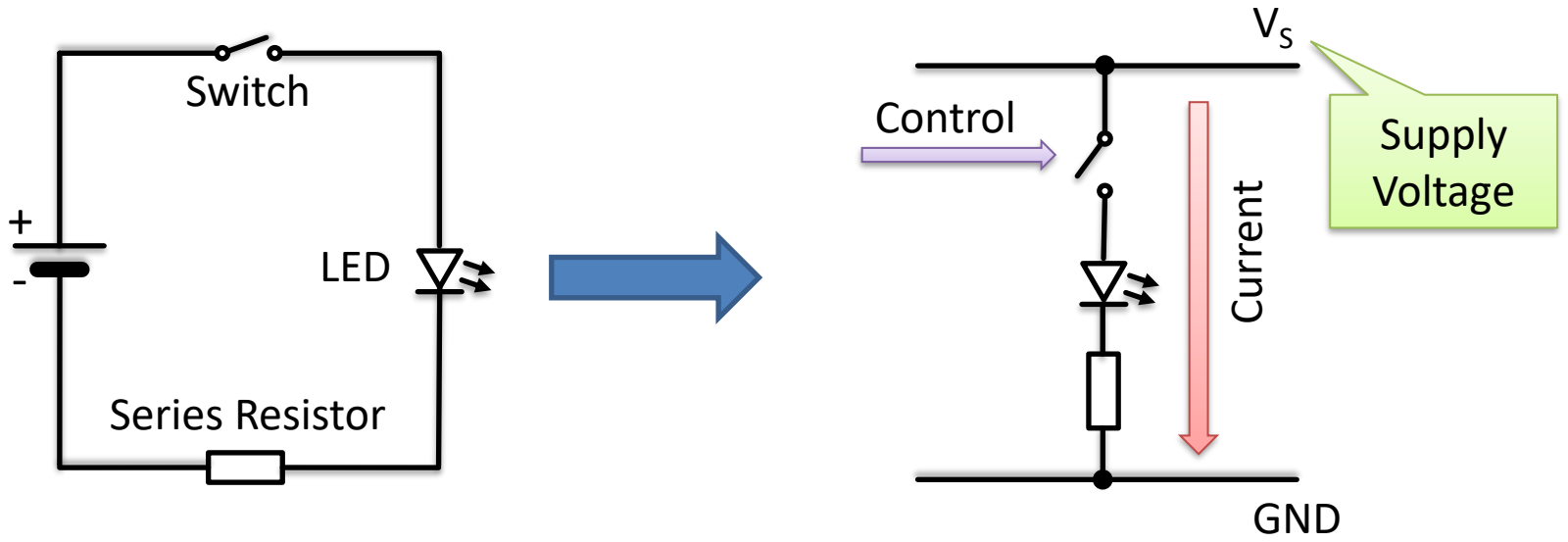
Circuit Diagrams

Electrical Engineering

Wolfgang Neff

Circuit Diagrams (1)

- In practice circuit diagrams are used
- For this the voltage source is split

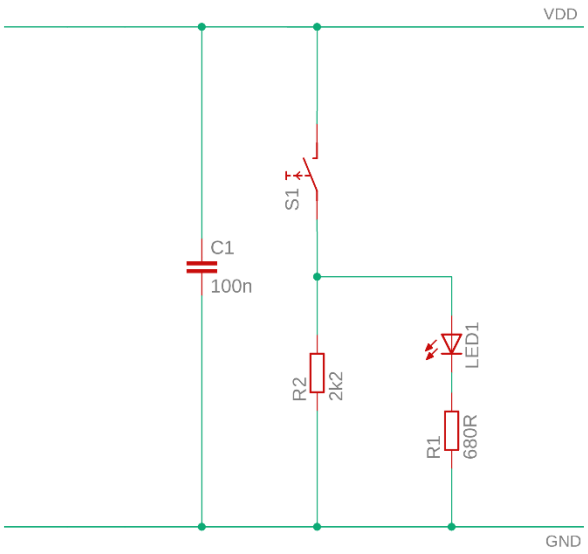


Circuit Diagrams (2)

- The current source (+) is at the top
  - Labeled by V_{CC}, V_{DD} etc.
- The current sink (-) is at the bottom
  - Labeled by Ground, GND, V_{ss} etc.
- The current flows from top to bottom
- The loads are between
- The control comes from the left

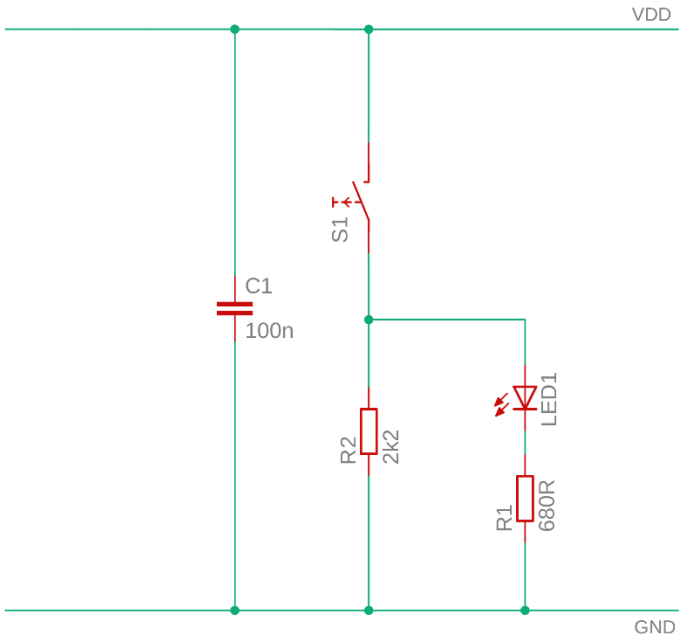
Circuit Diagrams (3)

- In a circuit diagram …
  - … there are components
- Every component …
  - … has a name
  - … has optionally a value
- For the values one uses …
  - … the unit prefix as decimal point or …
  - … the unit symbol if there is no prefix



Circuit Diagrams (4)

- In this circuit diagram there are:
  - A capacitor C1
    - The Capacity of C1 is 100 nF
  - A switch S1
  - A light-emitting diode LED1
  - The resistors R1 and R2
    - The resistance of R1 is 680 Ω
    - The resistance of R2 is 2.2 kΩ



Control

- Who controls?
  - In the last circuit it is the switch
- How does it control?
  - It opens or closes the circuit
- Who gets controlled?
  - The light-emitting diode gets controlled
- What is its effect?
  - The light-emitting diode shines or not