SPICE Syntax format for .netlist files

- Netlist files should end with a `.netlist` extension
- The circuit definition should be contained within `.circuit` and `.end` constructs.
  - A netlist file must contain *only one circuit definition*.
  - All lines present outside this block can be ignored, with a few exceptions.
- The circuit can contain Resistors (R), Inductors (L), Capacitors (C), Independent Voltage (V) and Current (I) Sources.

Element	Symbol	Units	Syntax
Resistor	R	Ω	`R<name> <n1> <n2> <value>`
Capacitor	C	F	`C<name> <n1> <n2> <value>`
Inductor	L	H	`L<name> <n1> <n2> <value>`
Independent Voltage Source (DC)	V	V	`V<name> <n1> <n2> dc <value>`
Independent Current Source (DC)	I	A	`I<name> <n1> <n2> dc <value>`
Independent Voltage Source (AC)	V	V	`V<name> <n1> <n2> ac <magnitude> <phase>`
Independent Current Source (AC)	I	A	`I<name> <n1> <n2> ac <magnitude> <phase>`

- Comments are prefixed with a `#`. All characters after a `#` in a line are treated as a comment.
  - Examples:
    - `R1 n1 n2 50 # 50 ohm resistor`
    - `# This is a comment line`
- Assume that the ground node is always named `GND`.
- For AC sources, the frequency of operation (in Hz) is denoted with a `.ac` command as shown below[1].
  - Information regarding the frequency of operation of the circuit is to be present outside the `.circuit ... .end` block.

    ```
    .ac V<name> <frequency>
    .ac I<name> <frequency>
    ```

---

1. Assume that there is only one frequency of operation for all sources. If there are multiple frequencies, you should throw an error, with an appropriate error message.↩