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Non - Technical Report For Simple Simulator Circuit

- Introduction

The Circuit Simulator is a tool designed to help users visualize and analyze electrical circuits. It allows anyone, from students to professionals, to build circuits and see how current and voltage behave in different setups. The program has a simple interface, making it easy for users to interact with the software.

- Purpose

The goal of the project is to create a simulation tool where users can add elements like batteries, resistors, and wires to a virtual circuit and solve for current and voltage. This tool can be especially helpful for students learning about electrical circuits or anyone needing to analyze basic circuits.

- Features
  - **Add Components**: You can add different components such as batteries, resistors, and wires to the circuit.
  - **Connect Components**: The components can be connected in a variety of ways, like series or parallel, depending on how the nodes (connection points) are arranged.
  - **Solve the Circuit**: After adding the components and connecting them, you can ask the tool to solve the circuit, and it will calculate the current and voltage for you.
- How It Works

The Circuit Simulator works by modeling an electrical circuit with nodes (junctions where elements are connected) and elements (such as batteries and resistors). It then applies basic rules of electricity, such as Ohm's Law (V = IR) and Kirchhoff's laws, to calculate the current and voltage in the circuit.

- **Batteries** provide the voltage that pushes current through the circuit.
- **Resistors** limit the flow of current.
- **Wires** connect the components, allowing electricity to flow between them.