Visual Circuit Builder

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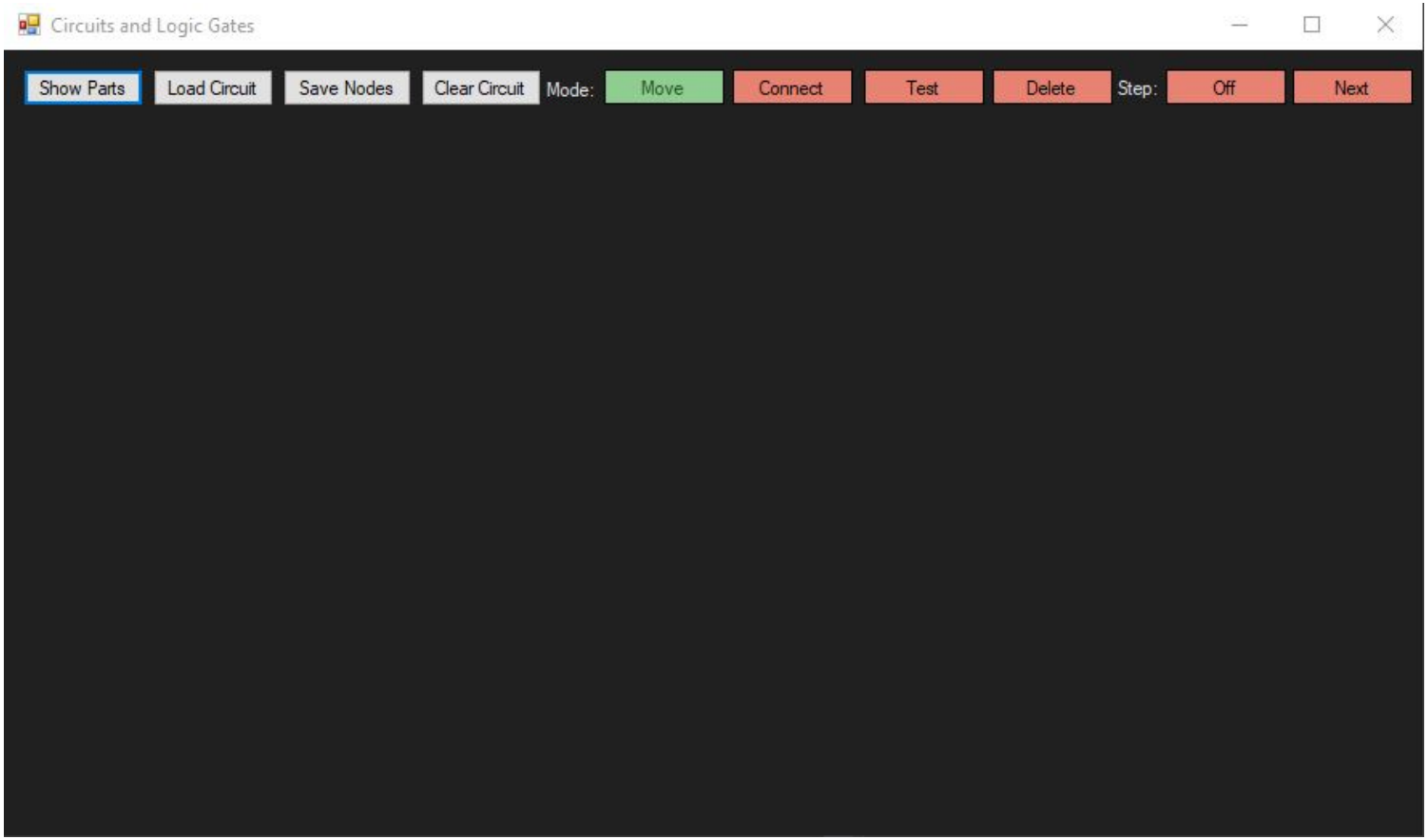
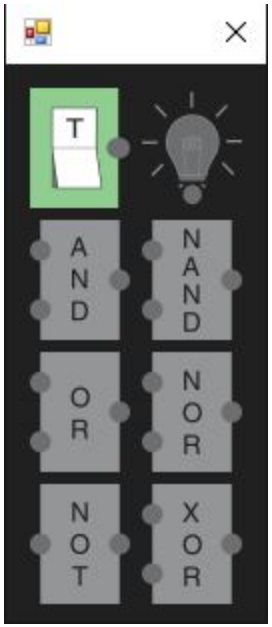
Documentation and Usage Instructions



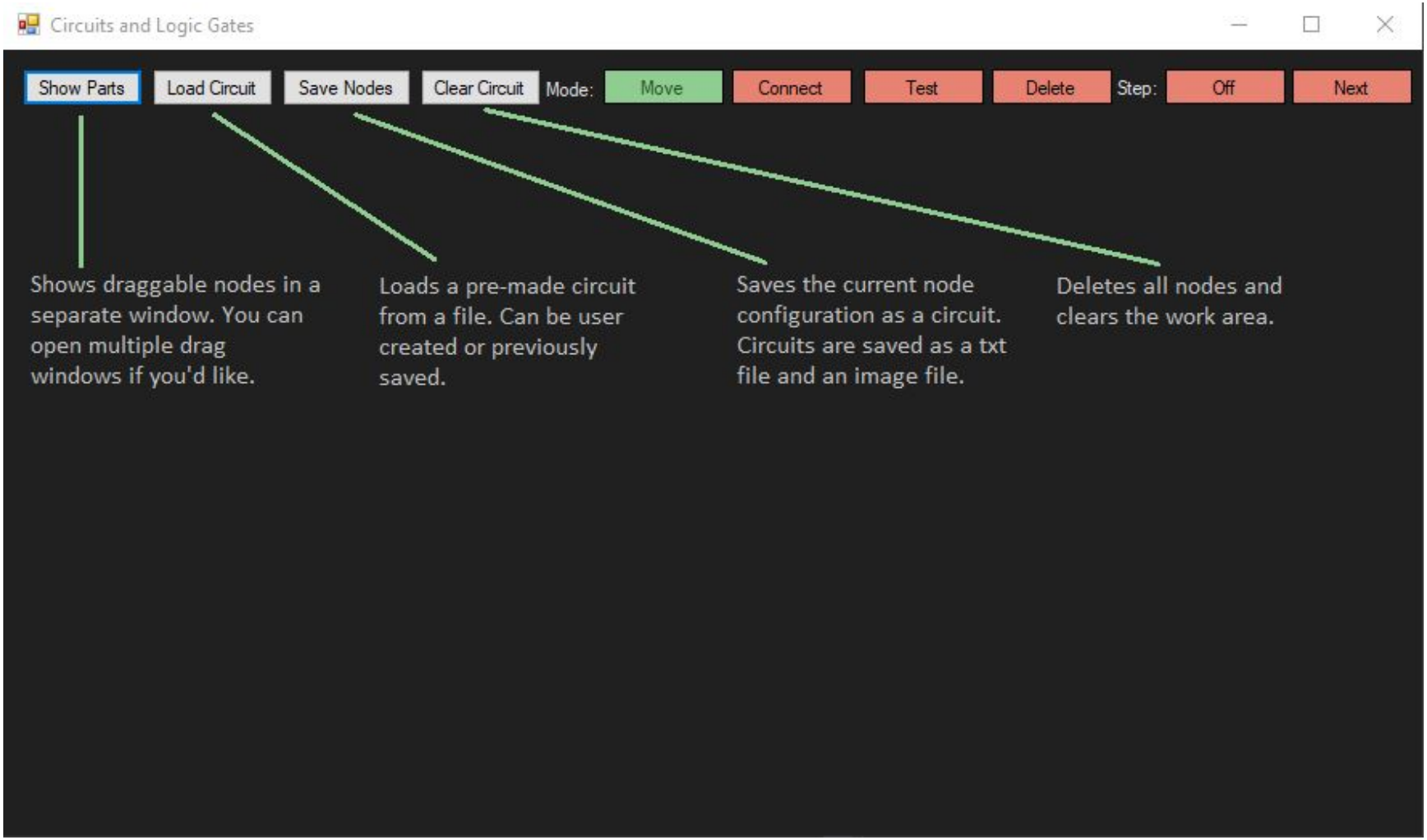
This is the opening window of the application. The large open space is where circuits will be built.

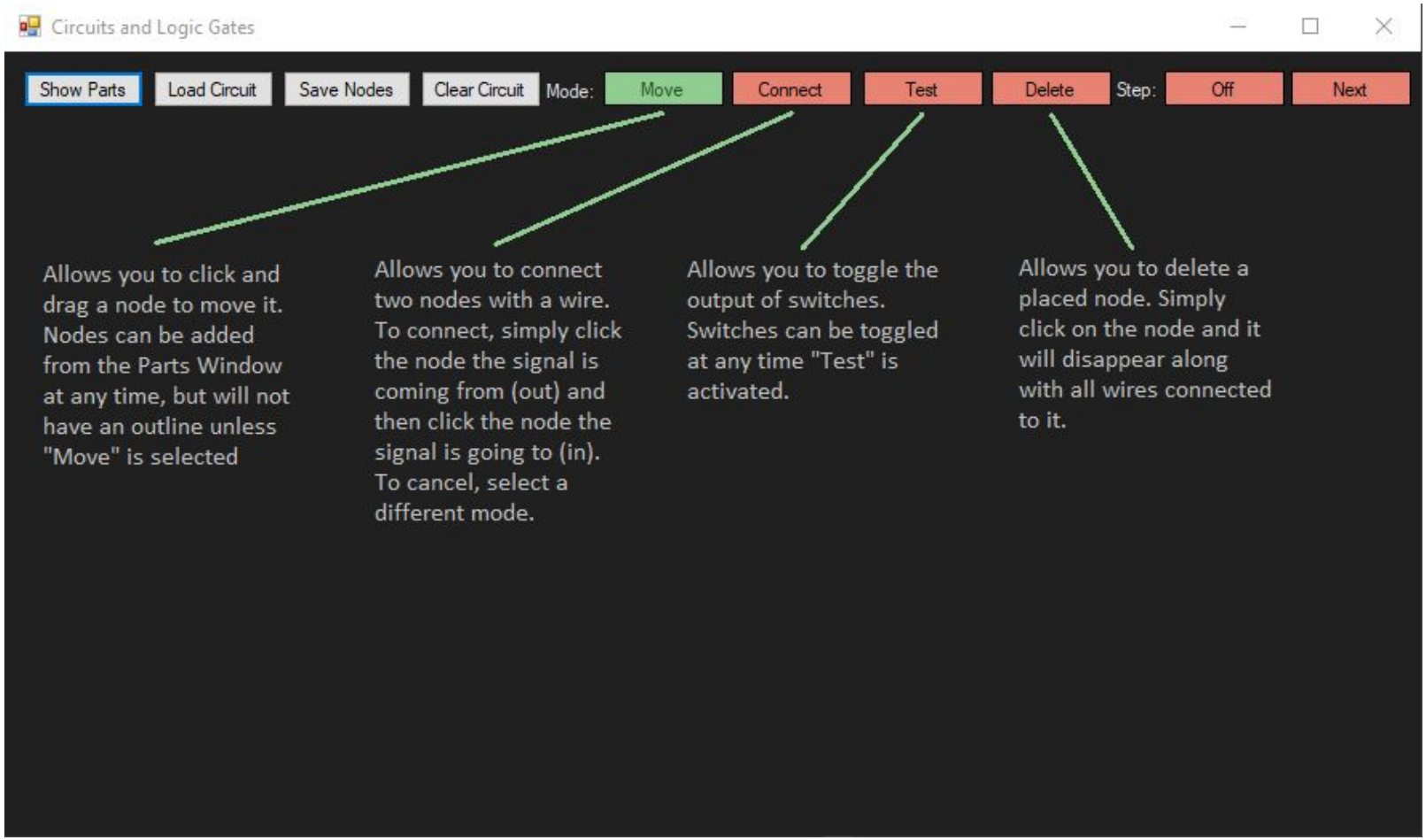


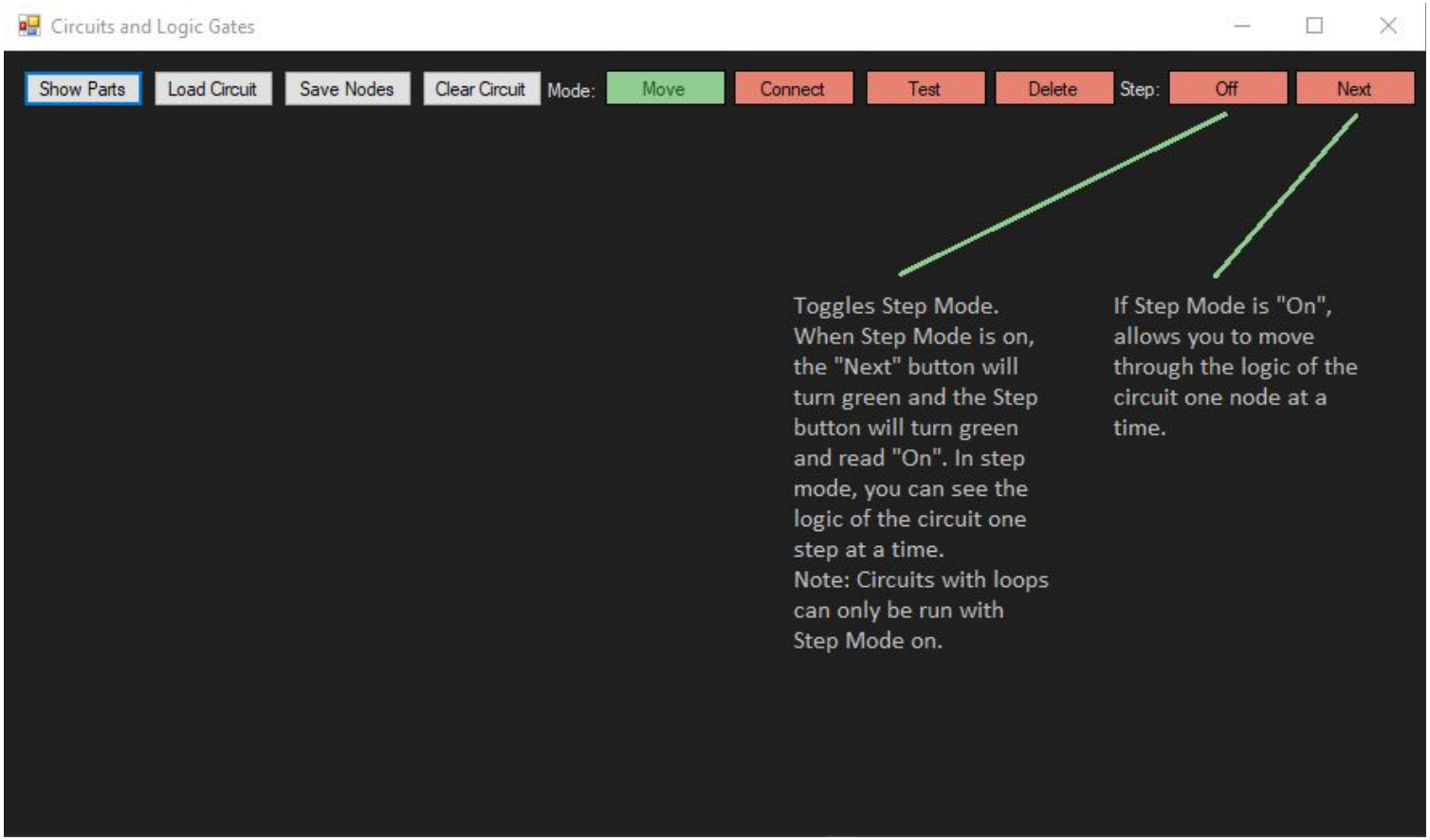
This is the **Parts Window**. You can drag nodes from here onto the circuit-building section of the opening window. Circuits start with one or more switches and end with light bulbs (though the light bulbs are not required at all).

Pre-made nodes are as follows:

Switch: Has no input and infinite outputs. Output value is toggled by clicking on it with “Test” selected.
Light Bulb: Has one input and no output. Simply shows what the output of the last node is.
AND: Has two inputs and infinite outputs. Output is true if both inputs are connected and true.
NAND: Has two inputs and infinite outputs. Output is true unless both inputs are connected and false.
OR: Has two inputs and infinite outputs. Output is true if both inputs are connected and at least one is true.
NOR: Has two inputs and infinite outputs. Output is true if both inputs are connected and false.
NOT: Has one input and infinite outputs. Output is the opposite of the input.
XOR: Has two inputs and infinite outputs. Output is true if both inputs are connected and are opposites of each other (T&F, F&T).


Circuits and Logic Gates
Show Parts
Load Circuit
Save Nodes
Clear Circuit
Mode:
Move
Connect
Test
Delete
Step:
Off
Next
Shows draggable nodes in a separate window. You can open multiple drag windows if you'd like.
Loads a pre-made circuit from a file. Can be user created or previously saved.
Saves the current node configuration as a circuit. Circuits are saved as a txt file and an image file.
Deletes all nodes and clears the work area.


Circuits and Logic Gates
Show Parts
Load Circuit
Save Nodes
Clear Circuit
Mode:
Move
Connect
Test
Delete
Step:
Off
Next
Allows you to click and drag a node to move it. Nodes can be added from the Parts Window at any time, but will not have an outline unless "Move" is selected
Allows you to connect two nodes with a wire. To connect, simply click the node the signal is coming from (out) and then click the node the signal is going to (in). To cancel, select a different mode.
Allows you to toggle the output of switches. Switches can be toggled at any time "Test" is activated.
Allows you to delete a placed node. Simply click on the node and it will disappear along with all wires connected to it.



Sample circuits and source code for v1.0 can be found at: http://compsci02.snc.edu/cs460/2019/wiesjm/