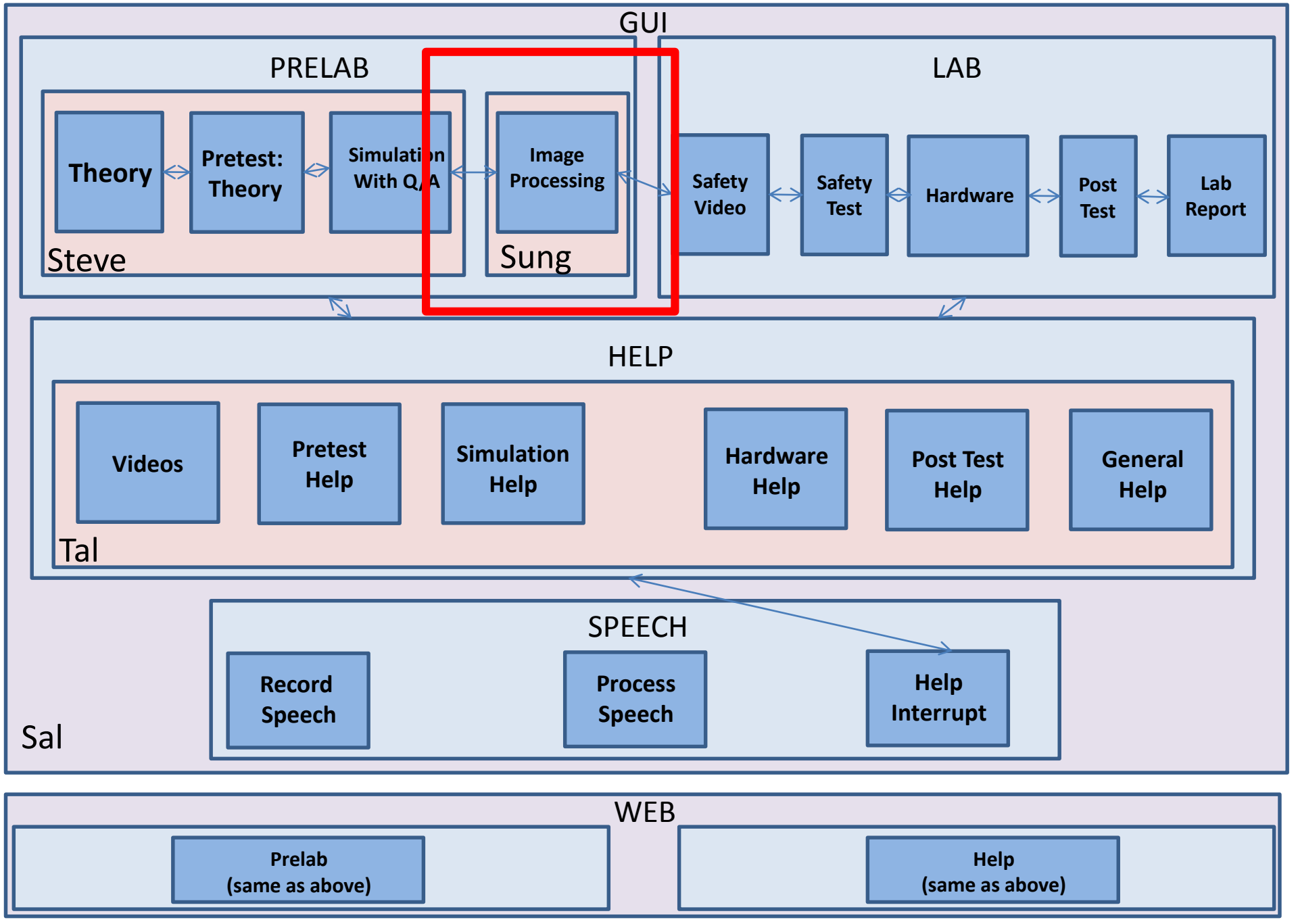
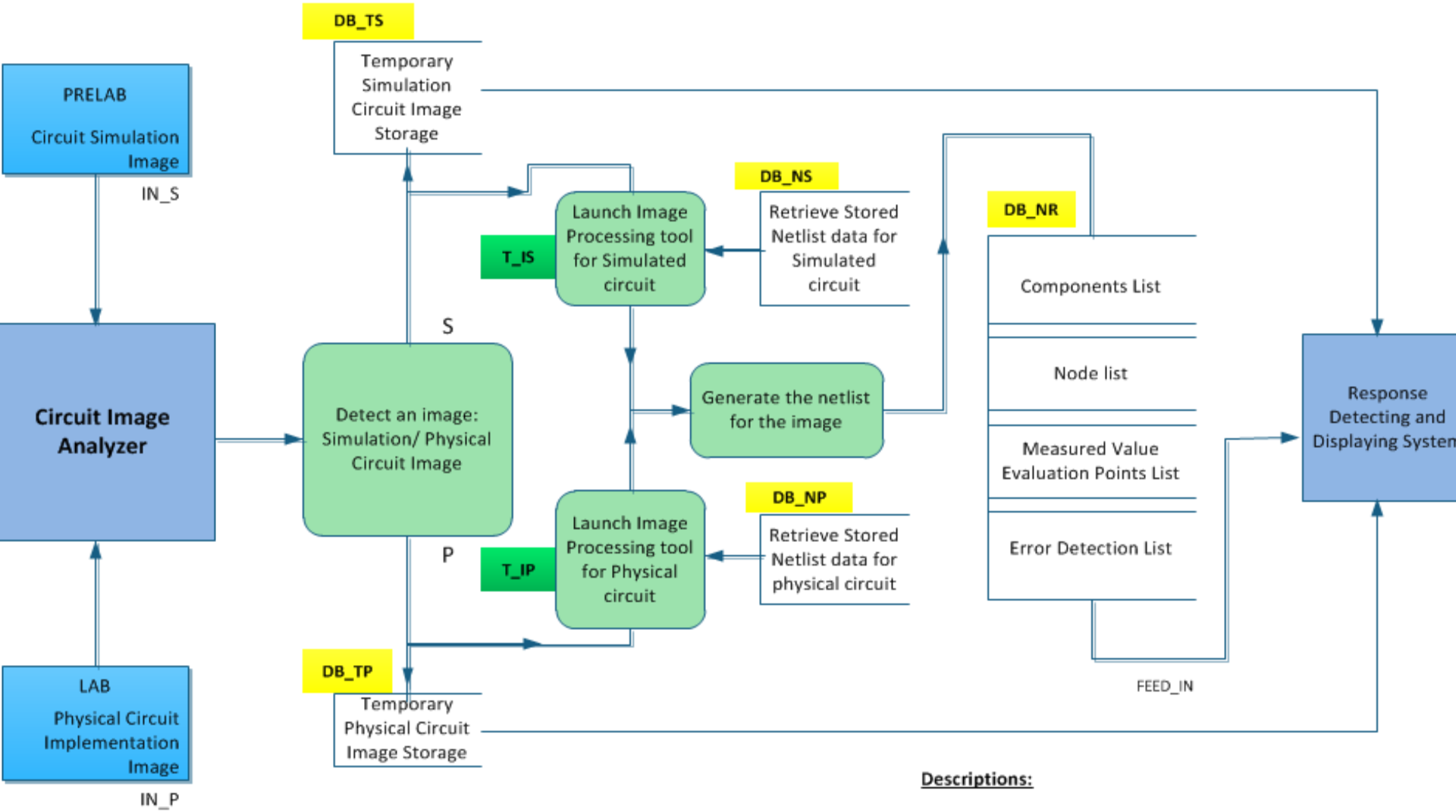
VLA Functional Block Diagram

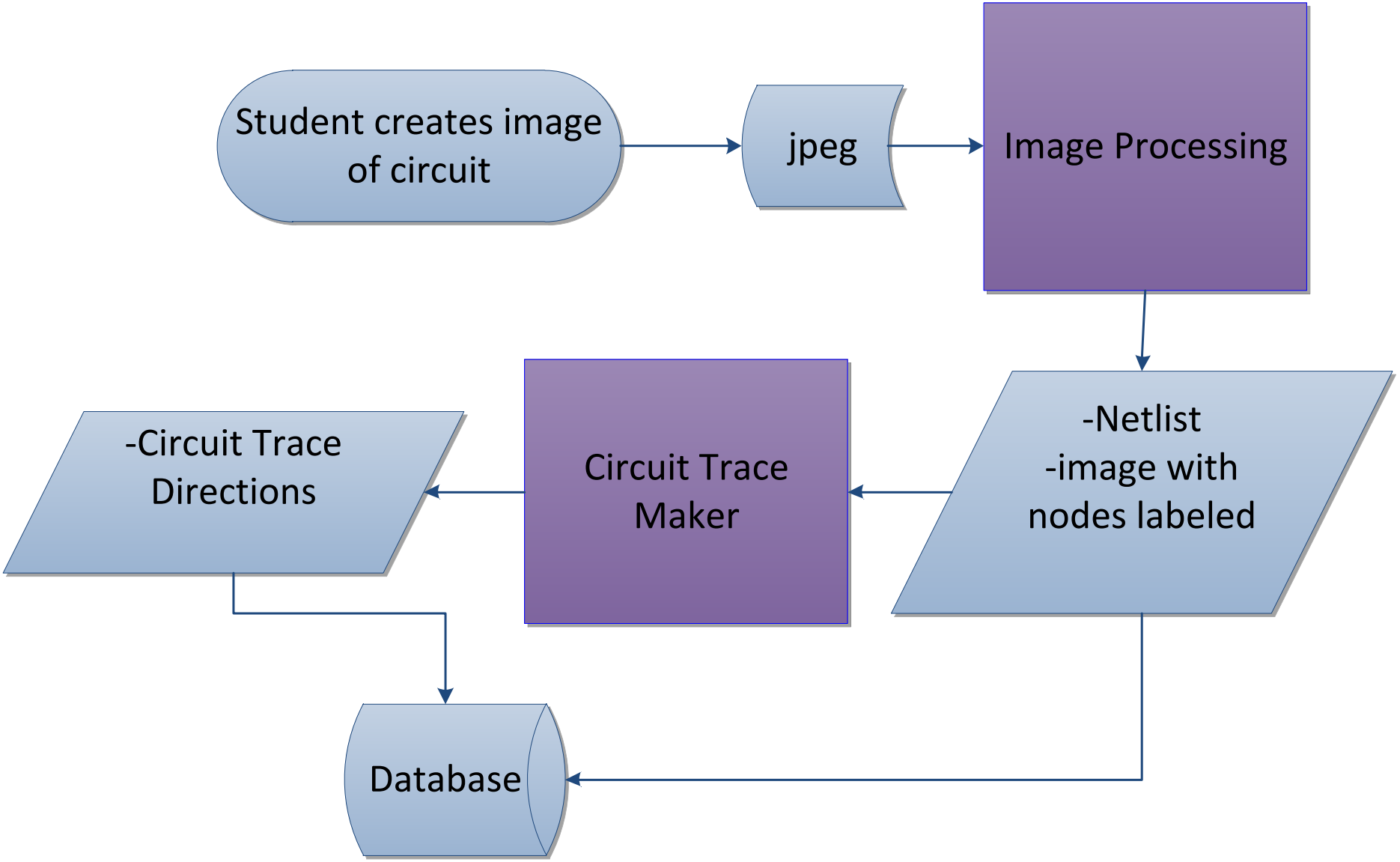


Circuit Image Processing System Schematic

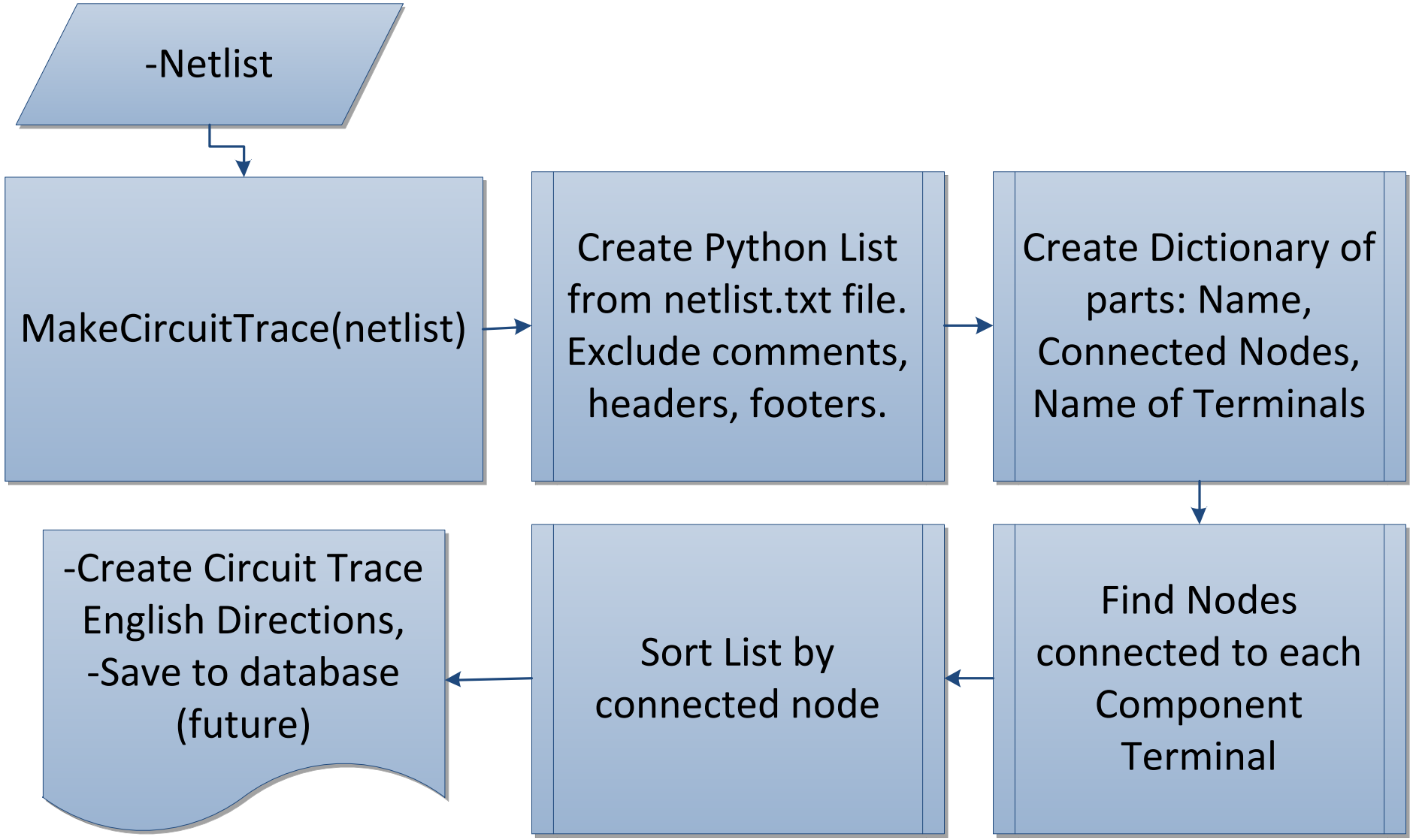


Descriptions:

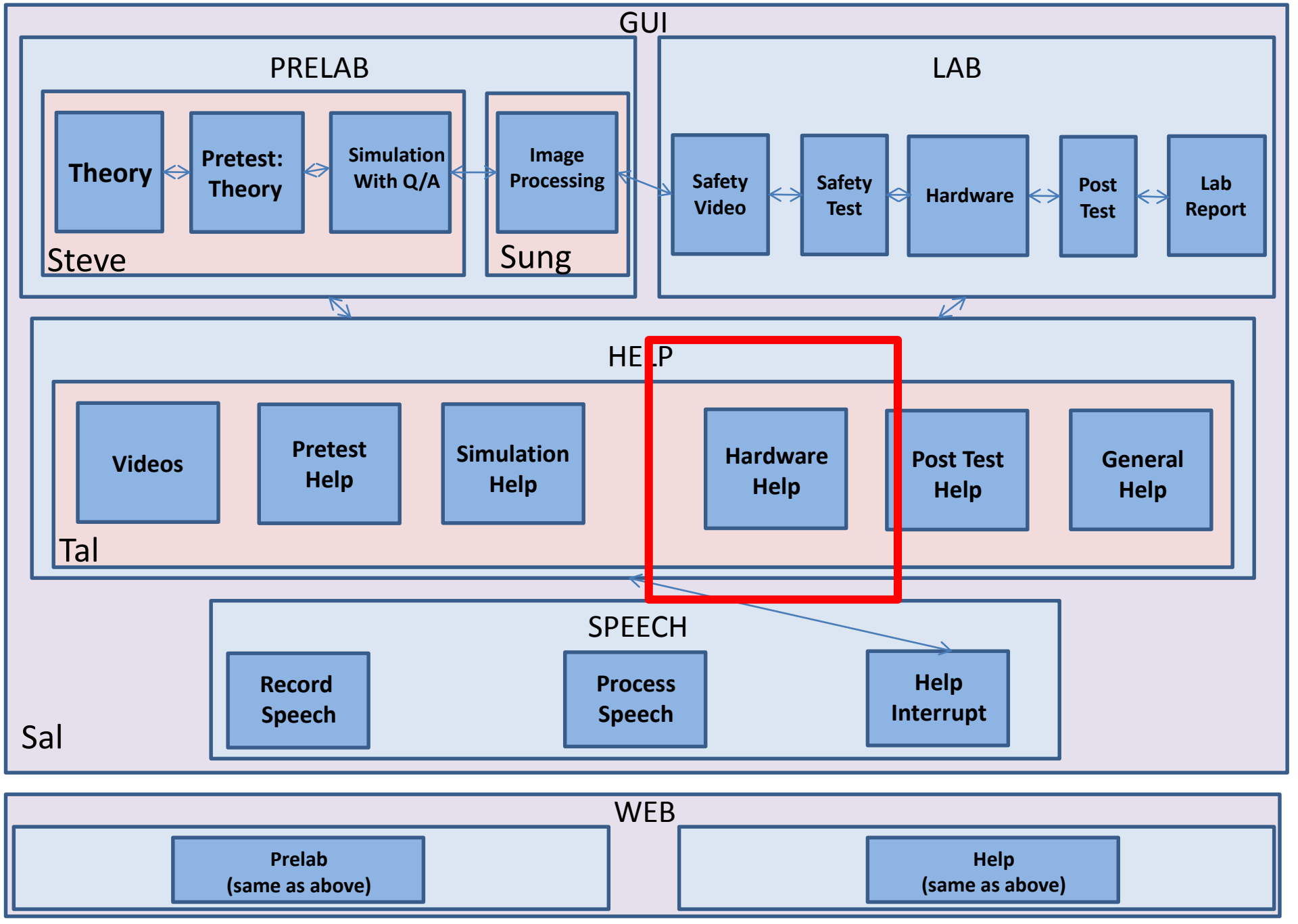
1. IN_S: Input Simulated Circuit Image
2. IN_P: Input Physically Assembled Circuit Image
3. DB_TS: Database-Temporary Storage of Simulated Circuit Image
4. DB_TP: Database-Temporary Storage of Physical Circuit Image
5. DB_NS: Database-Prestored Netlist Data for Simulation
6. DB_NP: Database-Prestored Netlist Data for Hardware Circuit
7. DB_NR: Database-Netlist Result from Analysis


Student creates image of circuit
jpeg
Image Processing
-Netlist
-image with nodes labeled
Circuit Trace Maker
-Circuit Trace Directions
Database

Circuit Trace Maker Process



Functional Block Diagram



Student creates image of circuit

jpeg

Image Processing

-Netlist
-image with nodes labeled

Circuit Trace Maker

-Circuit Trace Directions

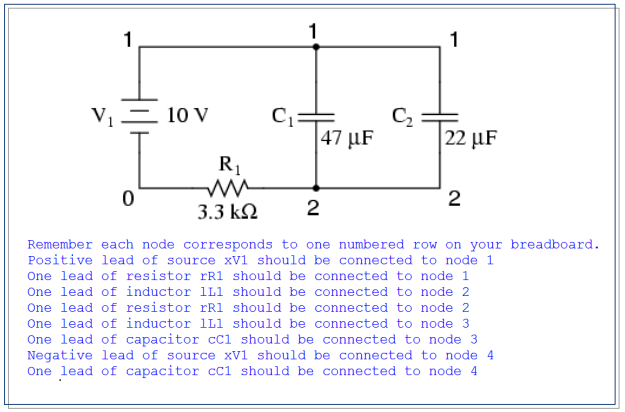
Database

Student Needs Help

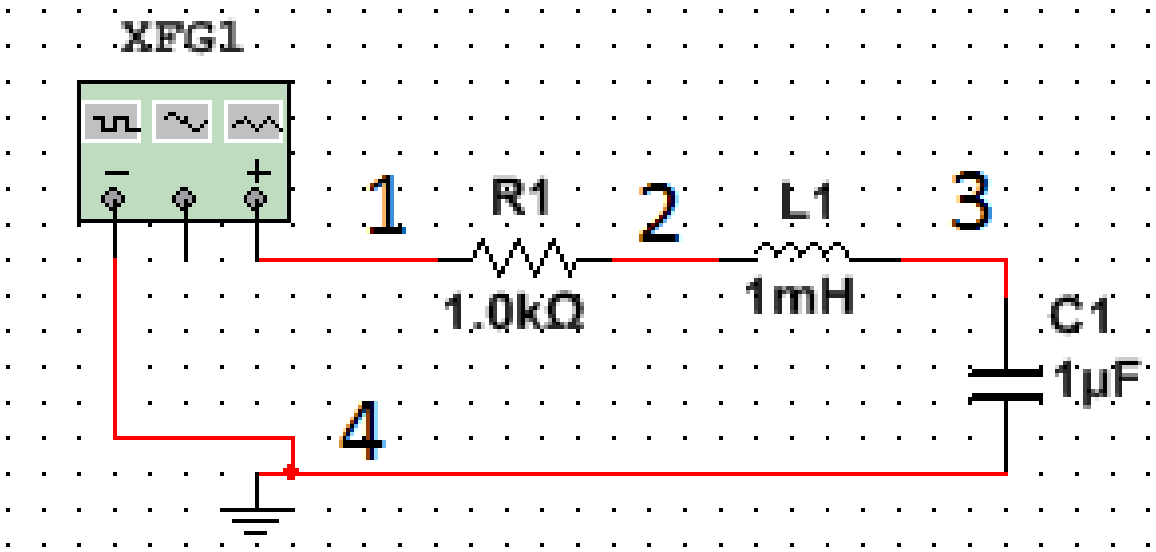
Hardware Help (voice or button triggered)

Help with breadboard

Circuit Trace with labeled Diagram presented

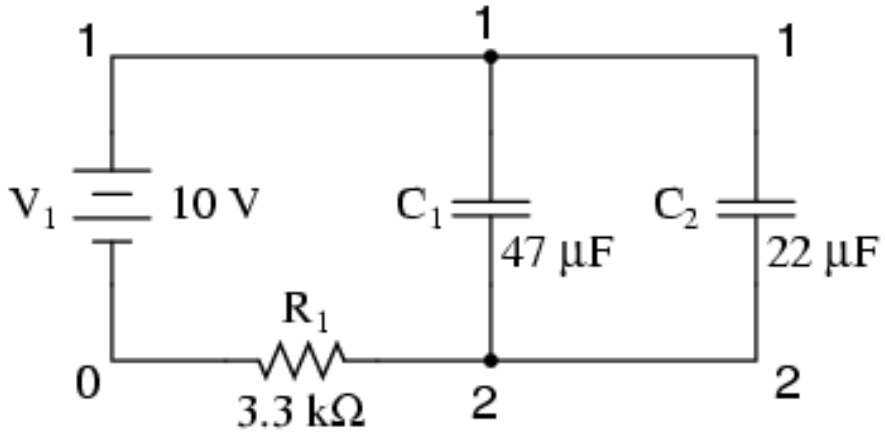


Sample Output



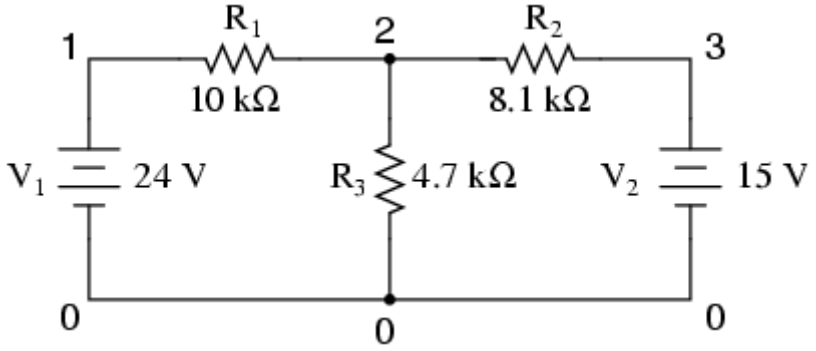

```
Remember each node corresponds to one numbered row on your breadboard.
Positive lead of source xV1 should be connected to node 1
One lead of resistor rR1 should be connected to node 1
One lead of inductor lL1 should be connected to node 2
One lead of resistor rR1 should be connected to node 2
One lead of inductor lL1 should be connected to node 3
One lead of capacitor cC1 should be connected to node 3
Negative lead of source xV1 should be connected to node 4
One lead of capacitor cC1 should be connected to node 4
```

Sample Output




```
Remember each node corresponds to one numbered row on your breadboard.
Negative lead of voltage source v1 should be connected to node 0
One lead of resistor r1 should be connected to node 0
Positive lead of voltage source v1 should be connected to node 1
One lead of capacitor c1 should be connected to node 1
One lead of capacitor c2 should be connected to node 1
One lead of capacitor c1 should be connected to node 2
One lead of resistor r1 should be connected to node 2
One lead of capacitor c2 should be connected to node 2
```

Sample Output




```
Remember each node corresponds to one numbered row on your breadboard.
Negative lead of voltage source v1 should be connected to node 0
Negative lead of voltage source v2 should be connected to node 0
One lead of resistor r3 should be connected to node 0
Positive lead of voltage source v1 should be connected to node 1
One lead of resistor r1 should be connected to node 1
One lead of resistor r1 should be connected to node 2
One lead of resistor r2 should be connected to node 2
One lead of resistor r3 should be connected to node 2
Positive lead of voltage source v2 should be connected to node 3
One lead of resistor r2 should be connected to node 3
```