

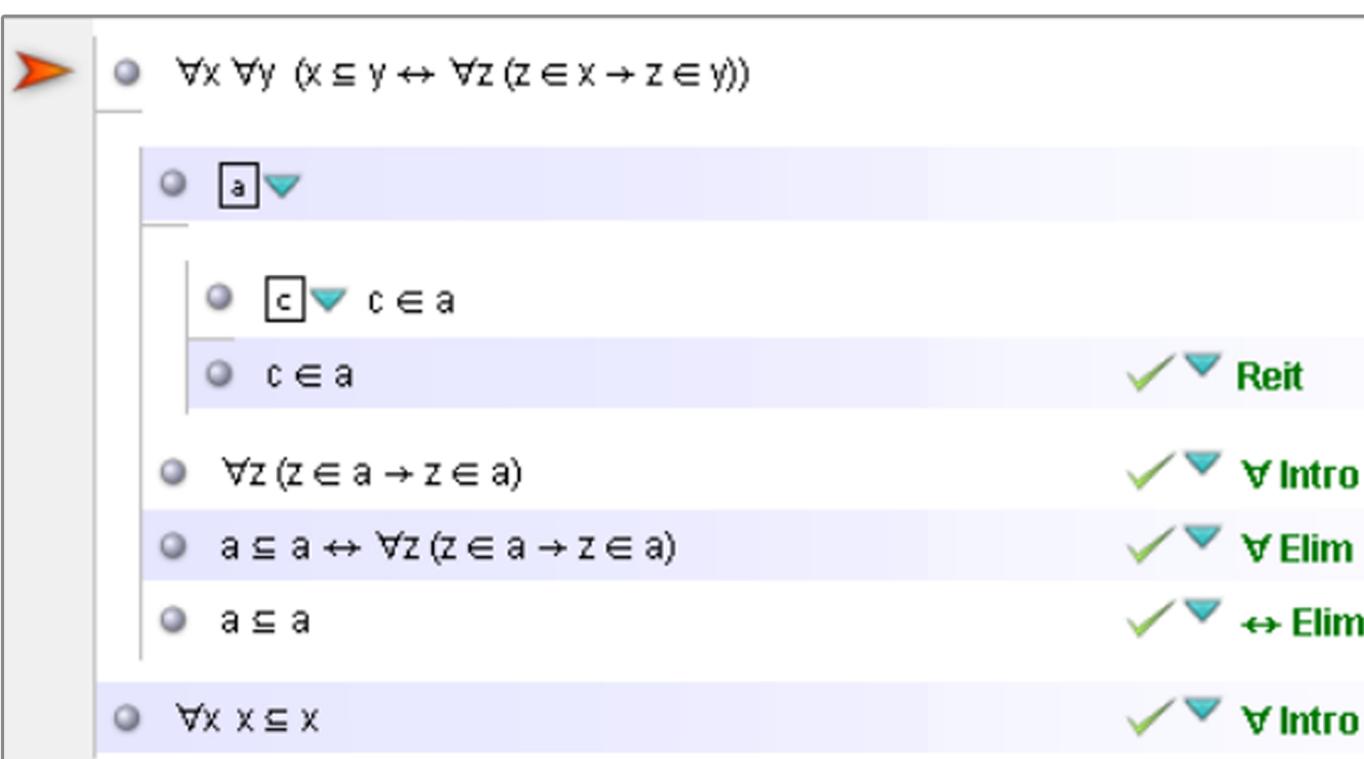
LEGUP

An Immersive Environment to Enhance Logical Reasoning

Objective: To create a more engaging and effective environment for logical reasoning

Logic Rules

Reflect important logical reasoning techniques such as Proof by Contradiction and Proof by Cases



Traditional system of logic
Good for computers, but less intuitive for humans

A screenshot of the LEGUP interface. At the top is a menu bar with File, Edit, Proof, Help, and various tool icons. Below is a toolbar with Open Puzzle, Open Proof, Save, Undo, Redo, Console, Hint, Check, Submit, Directions, Annotations, and a magnifying glass icon. The main area is divided into three sections: a "Rules" panel on the left containing "Basic Rules" (1-3), "Case Rules", and "Contradictions"; a "Board" section in the center displaying a 9x9 grid with lightbulbs and numbers; and a "Tree" section at the bottom showing a graphical representation of a proof tree with nodes, arrows, and red X marks.

Logic Proof

Graphical representation of proof helps user organize and visualize reasoning



Logic Puzzles

Concrete puzzles engage the user

Support of multiple puzzle types reveals general nature of logical inference principles

Contributors

Students: Mitchell Mellone
CSCI / COGS dual major, RPI

Aaron Perl
CSCI major, RPI

Lauren Sinski
DSIS/MGMT dual major, RPI

Avi Weinstock
CSCI, RPI

Faculty Advisor: Dr. Bram van Heuveln
Lecturer, Cognitive Science, RPI