Symbols used in the system:

‘bar’: −

‘ampersand’: &

‘wedge’: v

‘arrow’: →

‘double arrow’: ↔

‘turnstile’: ├

‘double turnstile’: ┤├ (I write that with two symbols in Word; ideally it would be just one symbol, with less space between, like: ⟛ )

‘existential quantifier’: ∃

‘not equal’: ≠

The bar, ampersand, and wedge are all easy to find on a keyboard; the arrow, double arrow, turnstile, double turnstile, existential quantifier, and not equal sign are the ones I’d need students to be able to click to enter – though if we just built a toolbar for that purpose, we might as well put the former symbols on it, too.

Here is a sample, simple proof:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | (1) | Q → (P → R) | A |
| 2 | (2) | −R | A |
| 3 | (3) | Q | A |
| 1,3 | (4) | P → R | 1,3 MPP |
| 1,2,3 | (5) | −P | 2,4 MTT |

I used a table to organize this when I made it in Word. Having something that auto-created the columns for students to fill out (though that maybe automatically filled in the second column, since that’s just the line numbers) would be ideal – but not necessary.

Here is a more complex proof, that shows the nesting of sub-proofs:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | (1) | P → Q | A |
| 2 | (2) | R → S | A |
| 3 | (3) | P v R | A/CP ├ Q v S |
| 4 | (4) | P | A/vE ├ Q v S |
| 1,4 | (5) | Q | 1,4 MPP |
| 1,4 | (6) | Q v S | 5 vI |
| 7 | (7) | R | A/vE ├ Q v S |
| 2,7 | (8) | S | 2,7 MPP |
| 2,7 | (9) | Q v S | 8 vI |
| 1,2,3 | (10) | Q v S | 3,4,6,7,9 vE |
| 1,2 | (11) | (P v R) → (Q v S) | 3,10 CP |

I manually created the vertical lines alongside the indented sub-proofs, which is clumsy. They also aren’t necessary, but it would be nice if they could be automatically created when a student starts a sub-proof. Technically the indenting isn’t necessary either, so none of this is essential—it would just be nice, in terms of organizing the proofs.

Lastly, here is a completed truth table:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P | Q | R |  | ((P | → | − | Q) | & | (P | → | R)) | ↔ | (P | → | (Q | v | R)) |
| T | T | T |  |  | F | F |  | F |  | T |  | ***F*** |  | T |  | T |  |
| T | T | F |  |  | F | F |  | F |  | F |  | ***F*** |  | T |  | T |  |
| T | F | T |  |  | T | T |  | T |  | T |  | ***T*** |  | T |  | T |  |
| T | F | F |  |  | T | T |  | F |  | F |  | ***T*** |  | F |  | F |  |
| F | T | T |  |  | T | F |  | T |  | T |  | ***T*** |  | T |  | T |  |
| F | T | F |  |  | T | F |  | T |  | T |  | ***T*** |  | T |  | T |  |
| F | F | T |  |  | T | T |  | T |  | T |  | ***T*** |  | T |  | T |  |
| F | F | F |  |  | T | T |  | T |  | T |  | ***T*** |  | T |  | F |  |

Contingent