Stanford University
Introduction to Logic

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# 1.1 Possible Worlds

## Question 1

This problem concerns the interpersonal relations of a small sorority. There are just four members - Abby, Bess, Cody, and Dana; and there is just one type of binary relationship - likes. The following table below shows who likes whom. A check in a box of the table indicates that the girl named at the beginning of the row likes the girl named at the head of the column; the absence of a check means that she does not. You can add a relationship by clicking in one of the empty squares of the table; you can remove a relationship by clicking in a checked square.

| | Abby | Bess | Cody | Dana |
|---|---|---|---|---|
| **Abby** | | | | |
| **Bess** | | | | |
| **Cody** | | | | |
| **Dana** | | | | |

The sentences in the table below describe some relationships among the girls, with an indication of whether they are true or false in the world depicted in the first table. As you change the world, the truth values of these sentences are recomputed and displayed in this table.

| Sentence | Truth Value |
|---|---|
| *Dana likes Cody.* | true |
| *Bess does not like Dana.* | true |
| *Cody does not like Abby.* | true |
| *Nobody likes someone who does not like her.* | true |
| *Abby likes everyone who likes Bess.* | true |
| *Dana likes everyone Bess likes.* | true |
| *Everybody likes somebody.* | true |

Change the world so as to make all seven sentences above true.

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