**Task:** Judge if the rules of the form t1  t2, where t1, t2 are tuples in Open IE format, is a valid inference (can reasonably infer the tuple (t2) from the given tuple (t1)).

For example, (x, studies at, y)  (x, is enrolled at, y) or (x, is the president of, y)  (x, is the citizen of, y) are valid. But  (x, chairs, y)  (x, is the president of, y) is invalid.

**OPENIE FORMAT:**

Larry Page; is the CEO of; Google

argument1; relation; argument2

(arg1; rel; arg2)

In the given task assume argument1 to be X and argument2 be Y, for both t1 and t2.

t1   t2

(x, rel1, y)  (x, rel2, y)

**File to be annotated:**

200\_tncf\_annotated.ann.jatin [attached]

**INPUT FILE FORMAT**

Every line has the following format:

rel1;rel2

**EXPECTED OUTPUT FORMAT**

> In front of the tuple, add a tag in the following format:

**"tag";**rel1;rel2

tag=0/1/2/3

‘0’ if it was most likely to yield an incorrect inference,

‘1’ if it will yield a correct inference

https://ssl.gstatic.com/ui/v1/icons/mail/images/cleardot.gif

‘2’ if the inference will be accurate in some scenarios and not in others. For example, (x, is native to, y) --> (x, is grown in, y) will be a valid rule if x is a crop but not if x is a person.

'3' if not able to identify the right tag

> If a rel precedes @R@ it means the arguments are switched i.e Y; rel; X in place of X;rel;Y

Example:

1. rel1**@R@**;rel2   
   **Y**;rel1;**X** --> **X**;rel2;**Y**
2. rel1;rel2**@R@**  
   **X**;rel1;**Y** --> **Y**;rel2;**X**
3. rel1@R@;rel2@R@  
   Y;rel1;X --> Y;rel2;X
4. rel1;rel2  
   X;rel1;Y --> X;rel2;Y

Example:   
update@R@;be modified by  
Y; update; X  --> X is modified by Y

is true.

update;be modified by  
X; update; Y  --> X is modified by Y

is NOT true.

**NOTE:**

1. All triples are normalized and in small case.
2. "be" may mean is/was/were

**SAMPLE INPUT**

double as@R@;run as@R@

climb;come up on

substitute for;substitute

update@R@;be modified by

try to build;try to start

reduce to;boil to

be refer to;apply to

**SAMPLE OUTPUT**

"2";double as@R@;run as@R@

"1";climb;come up on

"1";substitute for;substitute

"1";update@R@;be modified by

"2";try to build;try to start

"2";reduce to;boil to

"0";be refer to;apply to

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<details for #1>

"2";double as@R@;run as@R@

0-The display doubles as a touchscreen

1-The bar doubles as a restaurant

<detail for #5>

2";try to build;try to start

0-Ram is trying to build the code.

1-She tried to build an emotional relationship with him.

<detail for #6>

2;reduce to;boil to

0- roadway reduced to one lane --boil down is correct though

1- discussion reduced to a single question