2016 20906 박수연.

① Some students took French in spring 2015

Ontology :

    constant symbol : French, spring 2015

    1-place-predicate

        symbol : Student(x) : x is a student

    3-place-predicate

        symbol : take (x,y,z) : x take y in z

$\exists x$ Student (x) $\land$ take ( x, French, spring 2015)


② Every student who takes French

constant symbol : French.

1 Place Predicate symbol : Student (x) : x is a student

3 Place Predicate symbol : take (x,y,z) : x take y in z

                                   Pass (x,y,z) : x pass y in z

$\forall x,z$ Student(x) $\land$ take( x, French, z) $\Rightarrow$ Pass (x, French, z)


② Only one student took Greek in spring 2015

constant symbol : Greek, spring 2015

1-place predicate symbol : Student (x) : x is a student

3-place predicate symbol : take(x,y,z) : x take y in z

$\exists x$ (Student (x) $\land$ take (x, Greek, spring 2015)) $\land$

( $\forall y$ (Student(y) $\land$ take (y, Greek, 2015 spring)) $\Rightarrow x = y$ ))

④ All Germans speak the same language.

Ontology :

   constant symbol : language.

   1-place -predicate : Germany (x) : x is a German

   2-place -predicate: speak (x.y) : x speaks y language

$\forall x, y, z$   Germany (x) $\land$ Germany (y) $\land$ speak (x, z) $\Rightarrow$ speak (y, z)


Ⓔ There was a spy who took Greek in spring 2015

Ontology :

   constant symbols : Greek, spring 2015

   1-place- predicate : spy(x) : x is a spy

   3-place - predicate : take (x, y, z) : x take y in z

$\exists x$   spy(x) $\land$ take( x, Greek, spring 2015)