5. Relations

<relation> ::= <ALGOL relation> |
<character relation> |
<text value relation> |
<object relation> |
<reference relation>

5.1 Character relations

5.1.1 Syntax

<character relation> ::= <simple character expression>
<relational operator><simple character expression>

5.1.2 Semantics

Character values may be compared for equality and inequality and ranked with respect to the (implementation defined) collating sequence. A relation

x rel y,

where x and y are character values, and rel is any relational operator has the same truth value as the relation

rank(x) rel rank(y).

5.2 Text value relations

5.2.1 Syntax

<text value relation> ::= <text value>
<relational operator><text value>

5.2.2 Semantics

Two text values are equal if they are both empty, or if they are both instances of the same character sequence. Otherwise they are unequal.

A text value T ranks lower than a text value U if and only if they are unequal and one of the following conditions is fulfilled:

1) T is empty.
2) U is equal to T followed by one or more characters.
3) The i'th character of T ranks lower than the i'th character of U, and i (i $\geq$ 1) is the smallest integer such that the i'th character of T is unequal to the i'th character of U.

5.3 Object relations

5.3.1 Syntax

<object relation> ::= <simple object expression>
is <class identifier> |
<simple object expression>
in <class identifier>

5.3.2 Semantics

The operators "is" and "in" may be used to test the class membership of an object.

The relation "X is C" has the value true if X refers to an object belonging to the class C, otherwise the value is false.

The relation "X in C" has the value true if X refers to an object belonging to a class C or a class inner to C, otherwise the value is false.

5.4 Reference relations

5.4.1 Syntax

<reference comparator> ::= ==|=/=
<reference relation> ::= <object reference relation>|
<text reference relation>
<object reference relation> ::= <simple object expression>
<reference comparator><simple object expression>
<text reference relation> ::= <simple text expression>
<reference comparator><simple text expression>

5.4.2 Semantics

The reference comparators "==" and "=/=" may be used for the comparison of references (as distinct from the corresponding referenced values). Two object (text) references X and Y are said to be "identical" if they refer to the same object (text object) or if both are none (notext). In those cases the relation "X==Y" has the value true. Otherwise the value is false.

The relation "X=/=Y" is the negation of "X==Y".

Let T and U be text references. Observe that the relations "T=/=U" and "T=U" may both have the value true. Then T and U refer to physically distinct character sequences which are equal.

Reference comparators have the same priority level as the relational operators.