Why

We want to succinctly and clearly make several statements about objects and sets. We want to track the names we use, taking care to avoid using the same name twice.

Definition

An *account*[1] is several, sequential naming, logical, and quantified statements. We say "let _ denote a _" to introduce a name as a placeholder for a object, and we use _ = _ and _ ∈ _ to denote statements of identity and belonging. In other words, we have three types of sentences to record.

1. **Names.** State we are using a name.

2. **Identity.** We want to make statements of identity.

3. **Belonging.** We want to make statements of belonging.

Our main purpose is to keep a list of names, of quantified, logical and simple statments about them, and then statements we can deduce from these. In particular we want to group our name usage. In the English language we use paragraphs or sections to do so. In these sheets, we will use accounts. We will list the statements and label each with Arabic numerals (see Letters).

Experience suggests that we start with an example. Suppose we want to summarize the following english language description of some names and objects.

> Denote an object by a. Also, denote the same object by b. Also, denote a set by A. Also, the object denoted by a is an element of the set denoted by A. Also denote an object by c. Also c is the same object as b.

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[1] This sheet will be expanded in future editions.

In our usual manner of speaking, we drop the word "also". In these sheets, we translate each of the sentences into our symbols. For names we use, we write `name` in that font followed by the name. For logical statements we assume or take as premisses (in other words, which we alrady "have"), we write `have` followed by the logical statement. For deductions we write `thus` followed by the conclusion and then `by` followed by the Arabic numerals of the premisses. So we write:

Account 1. First Example

1	name	a
2	name	b
3	have	$a = b$
4	name	A
5	have	$a \in A$
6	name	c
7	have	$c = b$
8	thus	$a = c$ by 3,7

Accounts

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Deductions

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Quantified Statements

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Logical Statements

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Statements

↙ ↘

Identities   Sets

↘ ↙

Names

↙ ↘

Letters   Objects