

Otter Quick Start

I'm assuming that `otter` is the name of the otter executable. Name your input files in the form `filename.in`.

To run otter on a Unix system:

```
otter < filename.in
```

You will probably be using one two templates for your files:

```
set(auto).  
list(usable).  
    your clauses here  
end_of_list.
```

vs.

```
set(auto).  
formula_list(usable).  
    your formulas here  
end_of_list.
```

The `set(auto)` tells otter to automatically set the rules to be used. In both cases, your list of clauses or formulas will include the assumptions and *negated* conclusion. Otter will proceed to try to find a refutation.

`%` to end of line is a comment.

All clauses and formulas end with a period.

Syntax for clauses:

Variables begin with lower case one of the following only: u, v, w, x, y, z.

Every other identifier denotes a constant.

Distinct constants don't unify, but *may* stand for the same individual in a domain.

Function symbols and predicate symbols can be anything.

– before a literal designates negation

| between literals indicates disjunction.

Infix equality = and inequality != may be used.

Example of file contents with clause syntax:

```
set(auto).  
list(usable).  
-baby(x) | illogical(x).  
-despised(x) | -can_manage(x).  
-illogical(x) | despised(x).  
baby(c).  
can_manage(c).  
end_of_list.
```

Syntax for formulas:

Formulas can be nested arbitrarily. Use parentheses liberally.

```
all x ( ... ).  
exists x ( ... ).  
->   is implies  
-    is negation  
|    is disjunction  
&    is conjunction  
<-> is iff (logical equivalence)
```

Example of file contents with formula syntax. These formulas have the same meaning as the clauses above.

```
set(auto).  
formula_list(usable).  
all x ( baby(x) -> illogical(x) ).  
-(exists x ( despised(x) & can_manage(x) ) ).  
all x ( illogical(x) -> despised(x) ).  
-(all x ( baby(x) -> -can_manage(x) ) ).  
end_of_list.
```

If you prefer Prolog style variables, you may include before the list:

```
set(prolog_style_variables).
```

Identifiers beginning with \$:

\$F is used to denote the empty clause.

answer\$ is a predicate symbol used to extract answers. It can have any number of arguments.

Skolem functions and constants introduced by otter also begin with \$.