

Backwards reasoning is from (potential) conclusions to facts instead of from facts to conclusions.

Prolog uses it because the space of possible conclusions grows too quickly in the number of premises.

You can use the `consult` and `reconsult` predicates, or use bracket notation.

Bracket notation allows re-consultation of several files at once:

```
['file1.pl', file2.pl]
```

A Prolog database knows everything it needs to know.

A name followed by zero or more arguments. Parens are omitted if there are no arguments.

A structure terminated by a period. It represents a simple fact.

A structure followed by a turnstile and a list of structures separated by commas. It represents a rule.

A **collection** of clauses with the same *functor* (name) and arity.

This is similar to the collection of overloaded versions of a function in an imperative language.

A collection of predicates, in any order.

Use single quotes, which does **not** make a string.

Use double quotes or an escaped single quote to use a single quote.

Other escapes use backslash as in other languages.

```
-----  
call  --> |      | --> exit  
fail  <-- |      | <-- redo  
-----
```

exit **ports connect to** call **ports**.
fail **ports connect to** redo **ports**.

Facts can be added at any time using the `assert` predicate.

Facts can be removed at any time using the `retract` predicate.

Such rules are *dynamic*.

To force a rule to be interpreted as a single argument, since rules contain commas.

```
assert((loves(chuck, X) :- female(X), rich(X))).
```

- Output can't be undone.
- `assert` and `retract` can't be undone either.

`write` predicate outputs its single argument to stdout.
`nl` writes a newline.

listing(predicate)

listing

It's an anonymous variable and can represent any term.

`fail` doesn't force other the entire predicate to fail. Other clauses will be tried.

Using a cut creates a commit point, preventing backtracking past the commit point and preventing attempts on other clauses.

The predicate as a whole fails.