# Algol 60

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# 1 Implementation

The “Algol 60” language for DrRacket implements the language defined by the “Revised Report on the Algorithmic Language Algol 60,” edited by Peter Naur.

## 2 Including Algol 60 Programs

Although Algol 60 is mainly provided as a DrRacket language, `include-algol` supports limited use of Algol 60 programs in larger programs.

```
(require algol60/algol60)
```
package: `algol60`

```
(include-algol path-string)
```

Includes the Algol 60 program indicated by *path-string* as an expression in a Racket program. The included Algol 60 program is closed (i.e., it doesn't see any bindings in the included context), and the result is always `#<void>`.

```
(literal-algol string ...)
```

Evaluates the Algol 60 program indicated by the literal *string*s as an expression in a Racket program. The Algol 60 program is closed (i.e., it doesn't see any bindings in the included context), and the result is always `#<void>`.

This is generally useful when combined with the `at-exp` reader, e.g.,

```
#lang at-exp racket
@literal-algol{
  begin
    printsln (`hello world')
  end
}
```

# 3 Language

The DrRacket and `include-algol` implementation departs from the Algol 60 specification in the following minor ways:

- Strings are not permitted to contain nested quotes.
- Identifiers cannot contain whitespace.
- Argument separators are constrained to be identifiers (i.e., they cannot be keywords, and they cannot consist of multiple identifiers separated by whitespace.)
- Numbers containing exponents (using the "10" subscript) are not supported.

Identifiers and keywords are case-sensitive. The boldface/underlined keywords of the report are represented by the obvious character sequence, as are most operators. A few operators do not fit into ASCII, and they are mapped as follows:

```
times             *
quotient          div
exponential       ^
less or equal     <=
greater or equal  >=
not equal         !=
equivalence       ==
implication       =>
and               &
or                |
negation          !
```

In addition to the standard functions, the following output functions are supported:

```
prints(E)    prints the string E
printsln(E)  prints the string E followed by a newline
printn(E)    prints the number E
printnln(E)  prints the number E followed by a newline
```

A prompt in DrRacket's interactions area accepts whole programs only for the Algol 60 language.