

honu egg

A parser for 'honu' syntax
Extension for Chicken Scheme
Version 1.0

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1 About this egg

1.1 Version history

1.0 Initial release

1.2 Usage

Load this egg like so:

```
(require-extension honu)
```

2 Documentation

Honu syntax resembles Java, instead of Scheme. Like Scheme, however, Honu has no fixed syntax. Honu supports extensibility through macros and a base syntax of H-expressions, which are analogous to S-expressions.

Ignoring whitespace, an H-expression is either

- a number
- an identifier
- a string
- a character
- a sequence of H-expressions between parentheses
- a sequence of H-expressions between square brackets
- a sequence of H-expressions between curly braces
- a comment followed by an H-expression
- `#;` followed by two H-expressions
- `#hx` followed by an H-expression
- `#sx` followed by an S-expression

Whitespace for H-expressions is as in Scheme: any character for which `char-whitespace?` returns true counts as a whitespace.

2.1 Numbers

The syntax for Honu numbers is the same as for Java. The S-expression encoding of a particular H-expression number is the obvious Scheme number.

2.2 Identifiers

The syntax for Honu identifiers is the union of Java identifiers plus semicolon (`;`), comma (`,`), and a set of operator identifiers. An **operator identifier** is any combination of the following characters:

`+ - _ = ? : < > . ! % ^ & * / ~ |`

The S-expression encoding of an H-expression identifier is the obvious Scheme symbol.

Input is parsed to form maximally long identifiers. For example, the input `int->int;` is parsed as four H-expressions: `int`, `->`, `int`, and `;`.

2.3 Strings

The syntax for an H-expression string is exactly the same as for an S-expression string, and an H-expression string is represented by the obvious Scheme string.

2.4 Characters

The syntax for an H-expression character is the same as for an H-expression string that has a single content character, except that a single quote (`'`) surrounds the character instead of double quotes (`"`). The S-expression representation of an H-expression character is the obvious Scheme character.

2.5 Parentheses, Brackets, and Braces

A parenthesized `()`, bracketed `[]`, or braced `{}` H-expression sequence is represented by a Scheme list. The first element of the list is `#:parens` for a parenthesized sequence, `#:brackets` for a brackets sequence, or `#:braces` for a braced sequence. The remaining elements are the Scheme representation for the parenthesized, bracketed, or braced H-expressions in order.

2.6 Comments

An H-expression comment starts with either `//` or `/*`. In the former case, the comment runs until a linefeed or return. In the second case, the comment runs until `*/`, but `/* */` comments can be nested. Comments are treated like whitespace.

`#;` starts an H-expression comment, as in Scheme. It is followed by an H-expression to be treated as white. Note that `#;` is equivalent to `#sx#;#hx`.

2.7 Interface

`read-honu` [procedure]

`(read-honu [PORT [SHOW-LINE-NUMBERS]])`

Reads a single honu expression from `PORT`, which defaults to the value of `(current-input-port)`. If `SHOW-LINE-NUMBERS` is given and true, then parsing errors will report the offending line-number (as obtained by `port-position`).

3 License

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