

Libraries

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Outline

Requirements

Proposal

As yet unspecified

Requirements

Write and distribute SRFI reference implementations

Portable code can define libraries (modules)

Portable code can import from libraries

Libraries can export macros

Analysis of libraries shouldn't require whole-program analysis

Separate but dependent compilation of libraries

Libraries can export record types

Some way to use like-named exports of two libraries

Non-requirements?

Specifying language in which library is written

Specifying where libraries are located

Specifying how programs use libraries

Syntax

library \longrightarrow `(library library-name language library-form*)`

language \longrightarrow *library-name*

library-form \longrightarrow *definition*
 | *command*
 | *import-form*
 | *export-form*

export-form \longrightarrow `(export identifier ...)`
 | `(indirect-export keyword identifier ...)`

import-form \longrightarrow `(import import-spec*)`

import-spec \longrightarrow *library-name*
 | `(add-prefix import-spec id)`

Syntax

variable \longrightarrow *identifier*

keyword \longrightarrow *identifier*

library-name \longrightarrow *identifier*

definition \longrightarrow *define-form*
 | *define-syntax-form*
 | *(begin definition^{*})*
 | *derived-definition*

command \longrightarrow *expression*

expression \longrightarrow *literal* | *quote-expression* | ...

Notes

Specified language and imports must already be defined
(no mutual library recursion)

Expansion is left-to-right; evaluation is left-to-right.

Only visible outer bindings are those provided by

- language specifier
- import forms

Exports are identifier bindings

Indirect export declarations required for keywords whose transformers may expand into references to non-exported identifiers

May reexport imported bindings

As yet unspecified

When are libraries loaded?

- compile-time, run-time, both, user-specified, etc.

When are libraries “invoked”

- compile-time, run-time, both, user-specified, etc.

Are exported variable bindings mutable?

- by original exporting library, by other libraries, neither, etc.

Required built-in libraries

Local `import`

Local `modules`