

message-digest egg

Message Digest Support
Extension for Chicken Scheme
Version 1.5

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Table of Contents

1	About this egg	1
1.1	Version history	1
1.2	Usage	1
2	Documentation	2
2.1	Auxillary Procedures	3
3	License	4
	Index	5

1 About this egg

1.1 Version history

- 1.5 Exports
- 1.4 Removed ->integer
- 1.3 Added name field to primitive record
- 1.2 Added Auxiallary Procedures
- 1.1 Added un-managed context object support
- 1.0 Initial release

1.2 Usage

Load this egg like so:

```
(require-extension message-digest)
```

2 Documentation

Message Digest provides support for message digest primitives. A message-digest is a function taking arbitrary-length input and returning a fixed-length hash.

`make-binary-message-digest` [procedure]

(`make-binary-message-digest` OBJECT CONTEXT-INFO DIGEST-LENGTH INIT UPDATE FINAL [CALLER])

Returns the message-digest for OBJECT as a binary string. CALLER is the symbol for the calling context.

Acceptable objects are string, input-port, byte-vector, or anything that can be converted into a byte-vector. Lists, vectors, and homogeneous-vectors can be converted. Lists and vectors must only be composed of characters, fixnums, or booleans. A boolean is converted as #f = 0 and #t = 1. An input-port is not closed, but is read to end-of-file.

The arguments CONTEXT-INFO DIGEST-LENGTH INIT UPDATE FINAL are the components of a generic message-digest primitive. The return value of the phase procedures is ignored.

INIT [procedure]

(INIT CONTEXT)

Initialization phase procedure. Usually sets up the CONTEXT.

UPDATE [procedure]

(UPDATE CONTEXT BYTES COUNT)

Accumulation phase procedure. Must accumulate the COUNT BYTES. Will be called one or more times.

FINAL [procedure]

(FINAL CONTEXT RESULT)

Finalization phase procedure. Must build the resulting message-digest in the supplied RESULT string.

CONTEXT-INFO

When a fixnum, the size in bytes of the memory block to contain the state between the phases. When a procedure, it returns the context object.

DIGEST-LENGTH

The fixnum count of bytes in the result string.

The optional CALLER should be the name of the calling procedure.

`make-message-digest` [procedure]

(`make-message-digest` OBJECT CONTEXT-INFO DIGEST-LENGTH INIT UPDATE FINAL [CALLER])

Exactly as above but returns the message-digest for OBJECT as a hexadecimal encoded string of length 2 * DIGEST-LENGTH.

`message-digest-primitive` [record]
 (`message-digest-primitive` context-info digest-length init update final name)

The meaning of the fields are exactly as above. `name` is an optional string or symbol for identification. The usual generated record procedures are available, except `'*-set!'`. An immutable object.

`message-digest-primitive-apply` [procedure]
 (`message-digest-primitive-apply` MESSAGE-DIGEST-PRIMITIVE OBJECT [CALLER])

Returns a binary-message-digest of OBJECT using MESSAGE-DIGEST-PRIMITIVE.

2.1 Auxillary Procedures

`string->substring-list/shared` [procedure]
 (`string->substring-list/shared` STRING CHUNK-SIZE [START [END]])

Returns a list of CHUNK-SIZE substrings of STRING, on the interval [START END]. Defaults are [0 string-length]. Any remaining substring less than chunk-size is appended to the list.

The substrings share storage with the STRING!

`string->substring-list` [procedure]
 (`string->substring-list` STRING CHUNK-SIZE [START [END]])

Returns a list of CHUNK-SIZE substrings of STRING, on the interval [START END]. Defaults are [0 string-length]. Any remaining substring less than chunk-size is appended to the list.

`->byte-vector` [procedure]
 (`->byte-vector` OBJECT)

Converts the OBJECT into a byte-vector.

`string->hexadecimal` [procedure]
 (`string->hexadecimal` STRING [LENGTH])

Returns the STRING as a hex-encoded string. When LENGTH missing string-length is used. The returned string is 2 * string-length.

3 License

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Index

-		make-message-digest.....	2
->byte-vector	3	message-digest-primitive	3
		message-digest-primitive-apply.....	3
F		S	
FINAL.....	2	string->hexadecimal.....	3
I		string->substring-list	3
INIT	2	string->substring-list/shared.....	3
M		U	
make-binary-message-digest	2	UPDATE.....	2