

stack egg

Provides LIFO queue (stack) operations.
Extension for Chicken Scheme
Version 1.3

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1 About this egg

1.1 Version history

- 1.3 Exports
- 1.2 Added clear-stack
- 1.1 Doc fix [thanks to Toby Butzon], rename of stack-pop-1!, bug fix
- 1.0 Initial release

1.2 Requirements

This egg requires the following extensions:

`srfi-1`, `syntax-case`

1.3 Usage

Load this egg like so:

```
(require-extension stack)
```

2 Documentation

stack is a set of procedures and macros supporting LIFO queue operations. The stack is treated as an independent object, which is modified in place. In opposition to the common pattern of a variable being re-assinged a new stack representation after each mutating operation.

make-stack [macro]
(make-stack [LIST])

Returns a new stack, with optional initial elements from LIST.

clear-stack [macro]
(clear-stack STACK)

Make STACK empty.

stack? [macro]
(stack? STACK)

Is STACK a stack?

stack-empty? [macro]
(stack-empty? STACK)

Returns #t for an empty STACK, #f otherwise.

stack-length [macro]
(stack-length STACK)

Returns the number of elements on the STACK.

stack-depth [macro]
(stack-depth STACK)

Returns the index of the last element on the STACK, or -1 when stack empty.

stack-peek [macro]
(stack-peek STACK [INDEX])

Returns the element in STACK at INDEX. Index must be $0 \leq \& \leq (\text{stack-depth})$, defaults to 0 (top of stack).

stack-poke! [macro]
(stack-poke! STACK VALUE [INDEX])

Changes the STACK element at INDEX to VALUE. Returns the modified stack. The stack is modified in place. Index must be $0 \leq \& \leq (\text{stack-depth})$, defaults to 0 (top of stack)

stack-push! [macro]
(stack-push! STACK VALUE ...)

Pushes VALUE ... onto the STACK. Returns the modified stack. The stack is modified in place.

stack-pop*! [macro]
(stack-pop*! STACK)

Removes the top element from the **STACK** and returns it. The stack is modified in place. Does not check for the stack-empty condition!

stack-pop! [procedure]
(stack-pop! STACK)

Removes the top element from the **STACK** and returns it. The stack is modified in place.

stack-cut! [procedure]
(stack-cut! STACK START-DEPTH [END-DEPTH])

Removes the **STACK** elements from **START-DEPTH** thru **END-DEPTH** and returns a list of the stack elements. The stack is modified in place. The start-depth must be 0 \leq & \leq (stack-depth). The end-depth must be start-depth \leq & \leq (stack-depth), defaults to start-depth.

list->stack [macro]
(list->stack LIST)

Returns the **LIST** as a stack. The resulting stack may share memory with the list and the list should not be modified after this operation.

stack->list [macro]
(stack->list STACK)

Returns the **STACK** as a list, where the first element of the list is the top element of the stack. The resulting list may share memory with the stack object and should not be modified.

stack-for-each [macro]
(stack-for-each STACK PROCEDURE)

Applies the **PROCEDURE** to each element of the **STACK**, in order of top to bottom.

print-stack [macro]
(print-stack STACK)

Prints the elements of the **STACK** to the (current-output-port).

3 License

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