

## ● sys Module PREDICATION

A sys module is a set of the library module of the standard included in the system. When calling, it describes after "::sys."

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::sys <args VAR>

ARG when starting the Descartes language is assigned to VAR.

::sys <DLIBPATH VAR>

The path DLIBPATH which the Descartes language uses is displayed on VAR.

::sys <mkpred ARG>

ARG is changed into PRED.

::sys <writeln LIST>

After outputting LIST, a new line is started.

::sys <write LIST>

::sys <w LIST>

Outputting LIST.

::sys <wnl>

A new-line is outputted.

::sys <wo NUMBER>

NUMBER is outputted by the octal number.

::sys <wx NUMBER>

NUMBER is outputted by a hexadecimal number.

::sys <wf NUMBER>

NUMBER is outputted as a floating point number.

::sys <wg NUMBER>

NUMBER is outputted in a floating point number and the optimal form.

::sys <wtab>

A tab is outputted.

::sys <fr VAR STRINGS WIDTH>

The result of having carried out flush right of the STRINGS by width is set as VAR.

::sys <fl VAR STRINGS WIDTH>

The result of having carried out flush left of the STRINGS by width is set as VAR.

::sys <isNil ARG>

::sys <isAtom ARG>

::sys <isList ARG>

::sys <isPred ARG>

::sys <isVar ARG>

::sys <isUndefVar ARG>

::sys <isFloat ARG>

::sys <isInteger ARG>

true will be returned, if ARG is judged and it corresponds. unknown is returned if it does not correspond.

A

::sys <isTrue PRED>

::sys <isFalse PRED>

::sys <isUnknown PRED>

The result of PRED of ARG is judged, and true will be returned if it corresponds. unknown is returned if it does not correspond.

::sys <regex PATTERN STRINGS BEFORE-STRINGS MATCH-STRINGS AFTER-STRINGS>

The result of having applied the regular expression pattern to STRINGS is set as Match STRINGS, and STRINGS of order is set as front STRINGS and back STRINGS. (It does not operate on Windows.)

::sys <sub PATTERN STRINGS CORREDED-STRINGS AFTER-STRINGS>

The result of having transposed the portion which corresponded to STRINGS with the application of the regular expression pattern to Substitution STRINGS is set as Output STRINGS. Replacement is performed only once. (It does not operate on Windows.)

::sys <gsub PATTERN STRINGS CORREDED-STRINGS AFTER-STRINGS>

The result of having transposed the portion which corresponded to STRINGS with the application of the regular expression pattern to Substitution STRINGS is set as Output STRINGS. Replacement is performed into all the applicable portions of STRINGS. (It does not operate on Windows.)

::sys <split VAR STRINGS [DELIMITER]>

What divided STRINGS by the DELIMITER and was set to LIST is set as VAR. When the delimiter is not specified, it is divided with a blank and a tab.

::sys <length VAR LIST>

The length of LIST is set as VAR.

::sys <setvar VAR VAL>

A value is assigned to global VAR. Global VAR is registered in the form of the following as PRED.

::sys <VAR VAL>;

::sys <setarray VAR VAL INDEX>

A value is set as global VAR arrangement. Global VAR is registered in the form of the following as PRED.

::sys <VAR VAL INDEX>;

When carrying out specification of the arrangement of many dimensions, an index is specified as LIST.

::sys <VAR VAL (INDEX1 INDEX2 ...)>

What kind of kind and form are sufficient as an index besides a number.

::sys <random VAR>

A random number is assigned to VAR.

::sys <sin VAR RADIAN>

::sys <cos VAR RADIAN>

::sys <tan VAR RADIAN>

Trigonometric functions

::sys <asin VAR VAL>

::sys <acos VAR VAL>

::sys <atan VAR VAL>

Inverse trigonometric function

::sys <log VAR VAL>

::sys <exp VAR VAL>

Logarithmic function

::sys <sqrt VAR VAL>

Square root

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::sys <abs VAR VAL>
    Absolute value

::sys <int VAR VAL>
    Integral value

::sys <car VAR LIST>
::sys <cdr VAR LIST>
    car, cdr of LIST

::sys <cons VAR LIST1 LIST2>
    Connection of LIST

::sys <code CODE-NAME>
    A setup of a character code.
    UTF8, EUCJP, and SJIS can be specified.

::sys <char VAR STRINGS>
    STRINGS is decomposed for every be character, and it
    is made LIST, and is set as VAR. A multibyte character
    like a Japanese character is also right, and it is every
    character.

::sys <byte VAR STRINGS>
    STRINGS is decomposed for every character code,
    and it is made LIST, and is set as VAR.

::sys <asciichar VAR STRINGS>
::sys <utf8char VAR STRINGS>
::sys <eucchar VAR STRINGS>
::sys <sjischar VAR STRINGS>
    STRINGS is decomposed for every character code,
    and it is made LIST, and is set as VAR.

::sys <concat VAR LIST>
    LIST is made to unite, STRINGS is compounded and
    it is set as VAR.

::sys <bitand VAR NUMBER1 NUMBER2>
::sys <bitor VAR NUMBER1 NUMBER2>
::sys <bitxor VAR NUMBER1 NUMBER2>
::sys <bitnot VAR NUMBER1>
    bit operation

::sys <shiftr VAR NUMBER SHIFT>
::sys <shiftl VAR NUMBER SHIFT>

```

The bit shift of an integral value. shiftl is shifted to the left and shiftr is shifted to the right.

```
::sys <eq ARG1 ARG2>  
::sys <noteq ARG1 ARG2>  
::sys <is ARG1 ARG2>
```

Comparison of ARG1 and ARG2

```
::sys <getc VAR>
```

One character is inputted into VAR.

```
::sys <putc CHAR>
```

One character is outputted.

```
::sys <getline VAR [PRED...]>
```

One line is inputted and it is set as VAR. When PRED is set up, PRED is performed by considering a tmp file as an input.

```
::sys <tmpfile VAR>
```

Temporary FILE NAME is set as VAR

## EBNF Syntax analysis

```
::sys <TOKEN VAR PRED...>
```

After syntax-analysis PRED execution of an input, obtained token is set as VAR.

```
::sys <SKIPSPACE>
```

The space of an input is skipped.

```
::sys <C [VAR]>
```

An input is set as one-character VAR.

```
::sys <N [VAR]>
```

When an input is a number, it is set as VAR. unknown is returned when different.

```
::sys <A [VAR]>
```

When an input is the ASCII character, it is set as VAR. unknown is returned when different.

```
::sys <AN [VAR]>
```

When an input is the ASCII character or a number, it is set as VAR. unknown is returned when different.

```

::sys <^>
    The head of a line is matched.

::sys <$>
    The last of a line is matched.

::sys <CR [VAR]>
    When an input is CR new-line, it is set as VAR.
    unknown is returned when different.

::sys <CNTL [VAR]>
    When an input is the CNTL character, it is set as VAR.
    unknown is returned when different.

::sys <EOF [VAR]>
    When an input is the EOF character, it is set as VAR.
    unknown is returned when different.

::sys <SPACE>
    true is returned when an input is a space. unknown is
    returned when different.

::sys <PUNCT>
    true is returned when it is characters other than the
    alphabet and a number.

::sys <STRINGS VAR>
    STRINGS of "... " or '...' is matched, and it is set
    as VAR.

::sys <WORD VAR>
    In STRINGS(s) other than the alphabet, a number,
    and "_", unknown is returned by arbitrary STRINGS.

::sys <NUM VAR>
    The integer of an input is is set as VAR.

::sys <FNUM VAR>
    The floating point number of an input is set as VAR.

::sys <ID VAR>
    If an input STRINGS (a head is the alphabet and a
    number is also good except it) and it agrees, it
    will be set as VAR.

::sys <RANGE VAR CHAR1 CHAR2>

```

::sys <NONRANGE VAR CHAR1 CHAR2>

It will be set to true if contained in the range of a character 1 and a character 2.

::sys <GETTOKEN VAR>

The token which is a result of the last syntax analysis is set as VAR.

::sys <openr FILE-NAME PRED...>

The file of FILE-NAME is opened in postscript reading, and PRED is performed.

::sys <openw FILE-NAME PRED...>

The file of FILE-NAME is opened in postscript writing, and PRED is performed.

::sys <openwp FILE-NAME PRED...>

The file of FILE-NAME is opened in postscript writing, and PRED is performed.

::sys <countnode VAR>

The number of nodes currently used is set as VAR.

::sys <gc>

A garbage collector is started.

以上。