# **String Library for Nasforth**



The string library for Nasforth can be found <u>on this github page</u>. This a glossary for that library, as an aid to programming.

#### **Constants**

:="	( \$Caddr "string" )	Assigns the string "string" to the string constant. e.g. msg :=" hello mother!" N.B. Don't use in a definition only interpreted
>\$	( \$Caddr )	Copies a string constant to the string stack
>\$CONST	( \$Caddr ) ( ss: str )	Move top of string stack to the string constant
\$CONST	( max_len "name" )	Creates a string constant. When "name" is referenced the address of the max_len field is pushed to the stack. e.g. 100 string msg A \$const consists of a 'maxlength' long, 'currentlength' long followed by the actual characters. No termination character. So the address of the first char is msg 2 cells +
CLEN\$	( \$Caddr len )	Given the address of a string constant, returns its length
MAXLEN\$	( \$Caddr max_len )	Given the address of a string constant, returns its maximum length

### **Display**

.\$	( ) ( ss: str )	Pop and display the topmost string from string stack
.\$CONST	( \$Caddr )	Displays the string constant. e.g. fred .\$const
<b>\$.S</b>	( ) ( ss: )	Non-destructively displays the string stack

Manipulation

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+\$	( ) ( ss: s1 s2 s2+s1)	Replaces the top most two strings on the string stack with their concatenated equivalent
TRIM\$	( ) ( ss: s1 s2 )	Remove both leading and trailing spaces from s1, resulting in s2
LCASE\$	( ) ( ss: STR str)	On the topmost string, converts all upper case characters to lower case
LEFT\$	( len ) ( ss: str1 str1 str2)	The leftmost len characters are pushed to the string stack as a new string. The original string is retained
LTRIM\$	( ) ( ss: s1 s2 )	Removes leading spaces from s1, resulting in s2
MID\$	( start len ) ( ss: str1 str1 str2)	The word mid\$ produces a sub-string on the string stack, consisting of the characters from the topmost string starting at character start and ending at character end
REPLACE\$	( pos ) ( found: ss: s1 s2 s3 s4 not found: s1 s2 s3 s1 s2)	In string s2 find s3 and replace with s1, resulting in s4. If a replacement is made, the starting position of the replacement is returned, otherwise -1 is returned
REV\$	()(ss:s1 s2)	Reverse topmost string on string stack
RIGHT\$	( len ) ( ss: str1 str1 str2)	The rightmost len characters, pushed to the string stack as a new string. The original string is retained
RTRIM\$	()(ss:s1 s2)	Removes trailing spaces from s1, resulting in s2
UCASE\$	( ) ( ss: str STR)	On the topmost string, converts all lower case characters to upper case

### Search

<b>0</b> 00.011			
FIND\$	• • •	Searches string s1, beginning at offset, for the substring s2. If the string is found, returns the position of the string relative to the offset, otherwise returns -1	
FINDC\$	( char pos - 1 ) ( ss: )	Returns the first occurance of the character char in the top string. The string is retained. Returns -1 if the char is not found	

## **Stack**

-ROT\$	()(ss: s3 s2 s1 s1 s3 s2)	Rotates the top three string to the right
==\$?	( flag ) ( ss:	Performs a case-sensitive comparison of the topmost two strings on the string stack, returning true if their length and contents are identical, otherwise returning false
\$"	( "string" )	Pushes a string directly to the string stack. e.g. \$" hello world" .\$
DEPTH\$	( \$sDepth)	Returns the depth of the string stack
DROP\$	( ) ( ss: str )	Drops the top string from the string stack
DUP\$	( ) ( ss: s1 s1 s1)	Duplicates a string on the string stack
LEN\$	( len ) ( ss: )	Returns the length of the topmost string
NIP\$	( ) ( ss: s1 s2 s2)	Remove the string under the top string
OVER\$	()(ss: s1 s2 s1 s2 s1)	Move a copy of s1 to top of string stack
PICK\$	( n ) ( ss: strN)	Given an index into the string stack, copy the indexed string to the top of the string stack.  0 \$pick is equivalent to \$DUP  1 \$pick is equivalent to \$OVER etc.
ROT\$	( ) ( ss: s3 s2 s1 s2 s1 s3)	Rotates the top three string to the left
SWAP\$	()(ss: s1 s2 s2 s1)	Swaps the top two string items on the string stack

# String $\leftarrow \rightarrow$ Number

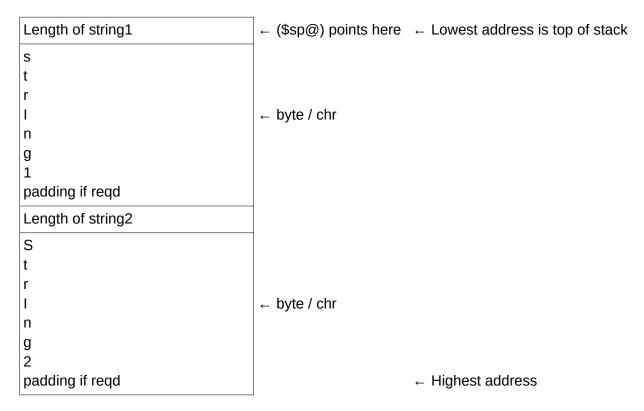
\$>D	( d ) ( ss: str )	Interprets the topmost string as a number, returning its value on the data stack as a double length signed integer
D>\$	, , ,	Pushes the double length number on the data stack to the string stack

#### **\$Const internals**

Maximum length – set when \$Const created	← cell
Present length – set whenever string changed	← cell
S	
t	
r	← byte / chr
i	
n	
g	

## **String Stack Internals**

With two strings on the stack, the contents is:-



Hope this is useful – Bob Edwards S.W. UK Nov 2023