CLIBASIC Language Manual

Manual symbols:

{} = choose from
[] = optional
| = choice separator
/ = continuous choice separator
… = continue

Syntax:

- Commands are separated by newlines or colons.
- Command, function, and variable names are not case sensitive.
- Variable names are allowed to contain A-Z, 0-9, #, $, %, !, ?, @, and _.
- Variables must have at least one non numeric valid character to be a valid name.
- Variables can be addressed as an array by appending a [, the element index, and a] to the end of the variable name.
- Function names are allowed to contain the same characters as variable names.
- Functions can be called by adding (, a comma separated list of arguments, and a) to the end of a function name.
- Arguments are separated by commas.
- Adding a comma with nothing after it will count as a argument but the command/function will be aware that the argument is empty.
- Strings must have one " to begin and another " to end.
- Strings can only be added together.
- Numbers can include . And 0-9.
- Logic compares must have blocks of a value, a =, >, <, >=, <=, =>, =<, or <>, and another value. These blocks must be separated by a &, or |.
- A whole number greater or equal to 0 may be prefixed before a command to indicate a line number.

Behavior:

- All file I/O functions and commands set an internal variable which can be queried using the `_FILEERROR()` function.
- Command, function, variable, and label names are case insensitive and are internally converted into upper-case before interpretation.
- For performance purposes, strings are not bounds-checked to be larger than `CB_BUF_SIZE` and counters/pointers are not checked to prevent `int`/`int32_t` overflow.
- On Unix-based systems such as Linux, to mimic the Windows behavior of opening CLIBASIC in a console window, CLIBASIC will attempt to open in xterm if `GUI_CHECK` is defined.
- On Windows, due to lack of a better solution, the `EXEC` command and `EXEC()` and `EXEC$()` functions are passed through `system()` and will be interpreted by CMD which can be insecure and/or buggy.

Commands:

CALL FILENAME$	Opens and runs FILENAME$ in the current session. Called programs will retain the same arguments as the parent.
{CHDIR|CD} DIR$	Changes the current directory to DIR$.
CLS [COLOR]	Clears the screen with optional color.
COLOR {FGC [, BGC] | [FGC], BGC}	Sets the foreground color to FGC and the background color to BGC.
DEL {VAR$|VAR}	Deletes the variable VAR$ or VAR.
DIM {VAR$\|VAR}, MAX [, {INIT$ | INIT}]	Makes an array with the max index being MAX and the initial value for each element being INIT/INIT$.
EXEC PROGRAM$ [, {ARG$/ARG}...]	Runs PROGRAM$ and passes the remaining arguments to PROGRAM$.
{EXIT|QUIT} [CODE]	Exits with CODE (or 0 if CODE is not supplied).
FCLOSE FILENUM	Closes file number FILENUM. If -1 is passed then all open files will be closed.
FILES [DIR$]	Lists the files and directories in the directory specified by DIR$ or the current directory if DIR$ is not provided.
FLUSH FILENUM	Flushes the file number FILENUM.
FSEEK FILENUM, POSITION	Moves the file cursor of file number FILENUM to POSITION.
FWRITE FILENUM, STRING$	Writes STRING$ to file number FILENUM.
{GOTO|GO} NAME	Jumps to label with the value NAME.
{LABEL|LBL} NAME	Creates a label with the value NAME.
LOCATE {X, [Y] | [X], Y}	Moves the cursor to X, Y.
{MKDIR|MD} NAME$	Makes a directory named NAME$.
{MOVE|MV|RENAME|REN} OLD$, NEW$	Moves/renames the file/directory OLD$ to NEW$.
PRINT [{STRING$/NUMBER} {,/;} ...]	Prints text on the screen, ‘;’ means print without newline and ‘,’ means print tab.

PUT [{STRING$/NUMBER} ...]	Puts STRING$ or NUMBER on the terminal.
{REMOVE|RM} PATH$	Removes the file or directory PATH$.
RESETTIMER	Resets the timer.
RUN FILENAME$ [, {ARG|ARG$}...]	Runs FILENAME$ in a new session and passes ARG/ARG$ to it.
{{SET|LET} {VAR$\|VAR}, {STRING$|NUMBER}|{VAR$\|VAR} = {STRING$|NUMBER}}	Sets the variable VAR$ or VAR to STRING$ or NUMBER.
SH COMMAND$	Runs COMMAND$ in sh on Linux and Command Prompt on Windows
{SRAND|SRND} SEED	Seeds the random number generator with SEED.
WAIT SEC	Waits for SEC seconds.
WAITMS MSEC	Waits for MSEC milliseconds.
WAITUS USEC	Waits for USEC microseconds.
_AUTOCMDHIST	Enables automatic history saving (saves to '.clibasic_history' to the user's home directory, remove this file to disable this feature).
_LOADCMDHIST FILENAME$	Loads the command history from FILENAME$.
_PROMPT STRING$	Sets the prompt string to solve to STRING$.
_PROMPTTAB WIDTH	Sets the prompt tab width to WIDTH.
_RESETTITLE	Resets the terminal title.
_SAVECMDHIST FILENAME$	Saves the command history to FILENAME$.
_SETENV NAME$, VALUE$	Sets the environment variable with the name NAME$ to VALUE$.
_SHATTRIB {ATTRIB$\|ATTRIB}, {VALUE$|VALUE}	Sets the 'SH' attribute ATTRIB$ or ATTRIB to VALUE$ or VALUE.
_TITLE STRING$	Sets the terminal title to STRING$.

_TXTATTRIB {ATTRIB$\|ATTRIB}, {VALUE$, VALUE}	Sets the text attribute ATTRIB$ or ATTRIB to VALUE$ or VALUE. Available attributes: 0/"RESET" 1/"BOLD" 2/"ITALIC" 3/"UNDERLINE" 4/"DBL_UNDERLINE"/"DOUBLE_UNDERLINE" 5/"SQG_UNDERLINE"/"SQUIGGLY_UNDERLINE" 6/"STRIKETROUGH" 7/"OVERLINE" 8/"DIM" 9/"BLINK" 10/"HIDDEN" 11/"REVERSE" 12/"UNDERLINE_COLOR" 13/"FGC" 14/"BGC" 15/"TRUECOLOR"/"TRUE_COLOR"/"24BITCOLOR"/"24BIT_COLOR"
_TXTLOCK	Stops the keyboard from echoing on the terminal.
_TXTUNLOCK	Undoes the effect of '_TXTLOCK'.
_UNSETENV NAME$	Unsets the environment variable named NAME$.

Functions:

ASC(STRING$ [, POSITION])	Returns the ASCII code of character POSITION (starting at and defaulting if not specified to zero) of STRING$.
BASENAME$(FILENAME$)	Returns the file name out of the file path provided by FILENAME$.
BGC()	Returns the current background color.
{CHDIR|CD}(DIR$)	Attempts to change the current directory to DIR$ and returns 0 on success and an error code on failure (the error code is taken directly from the C variable 'errno' set by the C 'chdir()' function).
CHR$(CODE)	Returns ASCII character CODE.
CHRAT$(STRING$, POSITION)	Returns the character at POSITION of STRING$.
CWD$()	Returns the current working directory.
CINT(NUMBER)	Returns NUMBER rounded.
COS(NUMBER)	Returns the cosine of NUMBER.
COSH(NUMBER)	Returns the hyperbolic cosine of NUMBER.
CURX()	Returns the X position of the cursor.
CURY()	Returns the Y position of the cursor.
DIRNAME$(FILENAME$)	Returns the directory name out of the file path provided by FILENAME$.
EOF(FILENUM)	Returns 1 if the end of file number FILENUM has been reached and 0 otherwise. -1 is returned if an invalid FILENUM is passed.
EOFD(FILENUM)	Returns 1 if the file cursor for file number FILENUM has passed the size of the file data and 0 otherwise. -1 is returned if an invalid FILENUM is passed.
EXEC(PROGRAM$ [, {ARG$/ARG}...])	Runs PROGRAM$, passes the remaining arguments to PROGRAM$, then returns the exit code of the program or 127 if running PROGRAM$ failed.

EXEC$(PROGRAM$ [, {ARG$/ARG}...])	Runs PROGRAM$, passes the remaining arguments to PROGRAM$, then returns the output of PROGRAM$.
EXP(NUMBER)	Returns the exponent of NUMBER.
FCLOSE(FILENUM)	Closes FILENUM and returns 1 if successful, otherwise returns 0. If -1 is passed then all open files will be closed.
FILES$([DIR$])	Returns a list of files and directories in the directory specified by DIR$ or the current directory if DIR$ is not provided.
FLUSH(FILENUM)	Returns 1 if flushing file number FILENUM was successful and 0 otherwise. -1 is returned if an invalid file number is passed.
FOPEN(FILE$, MODE$)	Opens file FILE$ with mode MODE$ and returns a file number if successful, otherwise -1 is returned.
FREAD(FILENUM)	Returns the next character of file number FILENUM as a number or -1 if unsuccessful or the end of the file was reached.
FREAD$(FILENUM)	Returns the next character of file number FILENUM. An empty
FSIZE(FILENUM)	Returns the position of the last character in FILENUM or -1 if the file number does not exist.
FWRITE(FILENUM, STRING$)	Writes STRING$ to file number FILENUM and returns 1 if successful, otherwise returns 0.
FGC()	Returns the current foreground color.
HEIGHT()	Returns the height of the terminal.
HEX$(NUMBER)	Returns the hexadecimal version of NUMBER.
INKEY$()	Returns a character from the terminal.
INPUT$(PROMPT$)	Returns a string after prompting for PROMPT$ (asks “?: ” if PROMPT$ is not supplied).
INT(NUMBER)	Returns NUMBER rounded down.
ISFILE(PATH$)	Returns 1 if PATH$ is a file, 0 if PATH$ is a directory, or -1 if PATH$ cannot be found.

LCASE$(STRING$)	Returns the lower-case version of STRING$.
LEN(STRING$)	Returns the length of STRING$.
LIMIT(NUMBER, {MAX | MIN, [MAX]})	Returns NUMBER trimmed to MIN and/or MAX.
LINE$(LINE, STRING$)	Returns line LINE (starting at zero) of STRING$.
LINES(STRING$)	Returns the line count of STRING$.
LOG(NUMBER)	Returns the natural logarithm of NUMBER.
LOG10(NUMBER)	Returns the common logarithm if NUMBER.
{MKDIR|MD}(PATH$)	Makes a directory with the location of PATH$ and returns 1 if successful, otherwise returns 0.
MOD(NUMBER)	Returns the modulus of NUMBER.
{MOVE|MV|RENAME|REN}(OLD$, NEW$)	Moves/renames the file/directory OLD$ to NEW$ and returns 1 if successful, otherwise 0 is returned.
OCT$(NUMBER)	Returns the octal version of NUMBER.
PAD(STRING$/NUMBER, WIDTH [, CHAR$])	Returns STRING$/NUMBER padded to WIDTH using CHAR$. CHAR$ must contain one character, if CHAR$ is not provided then ‘ ’ is used for STRING$ and ‘0’ is used for NUMBER.
PI()	Returns Pi.
{RAND|RND}({MAX | MIN, MAX})	Returns a random number from MIN (0 if MIN is not supplied) to MAX.
{REMOVE|RM}(PATH$)	Returns 1 if the removal of PATH$ was successful, otherwise returns 0.
RGB(RED, GREEN, BLUE)	Returns a 24-bit color code from separate red, green, and blue values.
SH(COMMAND$)	Runs COMMAND$ in the command line or shell and returns the exit status.
SH$(COMMAND$)	Runs COMMAND$ in the command line or shell and returns the text the command outputs.
SIN(NUMBER)	Returns the sine of NUMBER.

SINH(NUMBER)	Returns the hyperbolic sine of NUMBER.
SNIP$(STRING$, {TO | {[FROM], TO | FROM [, TO]}})	Returns the part of STRING$ defined by FROM through TO.
STR$(NUMBER)	Returns NUMBER as a string.
TAN(NUMBER)	Returns the tangent of NUMBER.
TANH(NUMBER)	Returns the hyperbolic tangent of NUMBER.
TIME()	Returns the current time in seconds.
TIMEMS()	Returns the current time in milliseconds.
TIMEUS()	Returns the current time in microseconds.
TIMER()	Returns the timer value in seconds.
TIMERMS()	Returns the timer value in milliseconds.
TIMERUS()	Returns the timer value in microseconds.
UCASE$(STRING$)	Returns the upper-case version of STRING$.
VAL(STRING$ [, TYPE])	Returns the numeric value of STRING$, TYPE is what type the number is (0 = DEC, 1 = HEX, 2 = OCT, etc/not supplied = Auto (sscanf auto-detect)).
WIDTH()	Returns the width of the terminal.
_ARGC()	Returns how many arguments where passed to the program
_ARG$([N])	Returns argument N or all arguments except #0 if N is not provided. Argument 0 is the full/real path to the program file.
_BITS$()	Returns the executable bit format.
_ENV$(STRING$)	Returns the content of the environment variable defined by STRING$.
_ENVSET(STRING$)	Returns 1 if the environment variable defined by STRING$ is set and 0 otherwise.
_ERRNOSTR$(ERRNO)	Returns the corresponding error string for error number ERRNO.
_FILEERROR()	Returns the last error produced by a file I/O function or command.

_HOME$()	Returns the path to the user’s home directory.
_OS$()	Returns the current operating system name.
_PROMPT$()	Returns the prompt string.
_RET()	Returns the exit status generated by RUN, CALL, or any EXEC or SH command or function.
_STARTCMD$()	Returns the full/real path to the command used to start CLIBASIC.
_TEST(CONDITION)	Evaluates and returns the result of testing CONDITION.
_TXTLOCK()	Returns 1 if the text lock is in effect and 0 otherwise.
_VER$()	Returns the CLIBASIC version.

Logic Commands:

DO	Begins a DO block.
DOWHILE CONDITION	Begins a DO block while CONDITION is true.
ELSE	Inverts an IF command.
ENDIF	Ends an IF block.
FOR VAR, INIT, CONDITION, I	Begins a FOR block, sets VAR to INIT and loops while adding I to VAR while CONDITION is true.
IF CONDITION	Begins an IF block and runs commands if CONDITION is true.
LOOP	Jumps to the beginning of a DO/LOOP block.
LOOPWHILE CONDITION	Jumps to the beginning of a DO/LOOP block if CONDITION is true.
NEXT	Jumps to the beginning of a FOR block.
REM	Comments out one command.

Symbols:

?	Shortcut to PRINT.
$	Shortcut to SH.
@	Shortcut to LABEL.
%	Shortcut to GOTO.
~	Shortcut to _TEST().
{'|#}	Comment until the end of the line.

Comparing:

=	Equal to
<>	Not equal to
>	Greater than
<	Less than
{>=|=>}	Greater than or equal to
{<=|=<}	Less than or equal to
&	And
|	Or