# APPLE COMMANDS 

| A Applesoft <br> I Integer Basic | D DOS 3.3 <br> P ProDOS | $f$ File Name | $A \$$ String <br> $\boldsymbol{X}$ | $m, n, i, j$ Integers <br> $\boldsymbol{x}, y, z$ |
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A I ABS $(x)$ Absolute (positive) value of $x$
A I AND Logical "and" in an IF statement
D P APPEND $\boldsymbol{f}_{\text {Add data to a sequential text file }}$
A I ASC(" $A$ ") ASCII value of a character
A I $\operatorname{ASC}(\boldsymbol{A} \boldsymbol{\$})$ ASCII of string's first character
A I AT See DRAW, XDRAW, HLIN and VLIN.
ATN $(x)$ Arctangent of $x$ in radians
I AUTO $n, m$ Start auto-line numbering
D P BLOAD $\boldsymbol{f}$ Load binary file $f$
D P BRUN $f$ Load and Run binary program $f$
D P BSAVE $\boldsymbol{f}, \mathbf{A n}, \mathrm{Lm}$ Save data; Address $n$, Length $m$
A I CALL $n$ Branch to machine language routine at $n$
P CAT Display 40 -column ProDOS disk contents
D P CATALOG Display disk's contents
D P CHAIN $f$ Run file $f$ without clearing variables
CHR $\$(n)$ Character whose ASCII value is $n$
CLEAR Clear all variables and strings
D P CLOSE $f$ Stop reading or writing a text file
CLR Clear all variables and strings
A $\mathrm{COLOR}=\boldsymbol{n}$ Set lo-res color to $n(0-15$ ) CON Continue an Integer program CONT Continue an Applesoft program $\operatorname{COS}(x)$ Cosine of $x$ in radians
P CREATE $\boldsymbol{f}$ Create a directory file
DATA $A \$, x, y, z$ Strings and values to be READ
DEF FN $A(X)=f(x)$ Define a function
I DEL $n, m$ Delete program lines $n$ through $m$
D P DELETE $\boldsymbol{f}$ Delete file from a disk
I DIM $X(n)$ Dimension a numerical aray
A I DIM $\boldsymbol{A} \boldsymbol{\$}(\boldsymbol{n})$ Dimension a string-aray or string DRAW $n$ AT $i, j$ Draw hires shape $n$ at $i, j$
DSP $X$ Display variable values and line numbers
A 1 END Stop a program with no message (see STOP)
D P EXEC $f$ Execute text file f
$\operatorname{EXP}(x)$ e (2.718289) to the $x$ th power
FLASH Set flashing screen output (40-columns)
P FLUSH Write buffer to disk without closing file FN See DEF FN
A I FOR X=n TO $m$ Let $X=n, X=n+1 .$. until $X=m$
D FP Clear memory; switch to Applesoft Basic
P FRE Free all available memory (garbage collection) FRE(0) Amount of free memory available

A GET $\boldsymbol{A} \$$ Wait for one-character user input GET $X$ Wait for one-number user input GOSUB $\boldsymbol{n}$ Branch to subroutine at line $n$
I GOSUB $X$ Branch to subroutine at line $X$ GOTO $n$ Branch to line n GOTO $X$ Branch to line $X$
A GR View and clear lo-res page 1
A HCOLOR=n Set hi-res color to $n$ (0-7)
HGR View and clear upper hi-res page 1
HGR2 View and clear full hi-res page 2
I HIMEM: $\boldsymbol{n}$ Set highest memory address available
A I HLIN $n, m$ AT $\boldsymbol{j}$ Draw a horizontal lo-res line
HOME Clear text screen to black HPLOT $i, j$ Plot a hi-res point HPLOT $i, j$ TO $n, m$ Draw a hi-res line HTAB $n$ Position cursor at horizontal position $n$

A I IF...THEN... Logical "if' true, "then" execute
A I D P IN\#n Take input from slot $n$
D INIT $f$ Erase and format a disk
A I INPUT $\boldsymbol{X}$ (or $A \$$ ) Wait for user input
I INPUT "ABC", $A \$$ (or $X)$ Print \& wait for input INPUT " $A B C$ "; $A \boldsymbol{A}$ (or $X$ ) Print \& wait for input
D INT Switch to Integer Basic; clear memory INT(RND(1)* $\boldsymbol{n}$ ) Random integer 0 to $n$ - $\boldsymbol{J}$
A INT( $\boldsymbol{x}$ ) Integer value of $x$
INVERSE Set black-on-white text output

## I LOMEM: $n$ Set start-of variables location

MAN Cancel AUTO
D MAXFILES $n$ Reserve $n$ file buffers (1-16) $\operatorname{MID} \$(A \$, n, m) m$ characters of $A \$$, starting at $n$
A $\$(n, m)$ Characters $n$ through $m$ of a string $m$ MOD $n$ Remainder of $m$ divided by $n$
D MON C,I,O Display disk functions
NEW Delete current program from memory
NEXT Define bottom of a FOR-NEXT loop
D NOMON Define gottom of a FOR-NEXT loop
NORMAL Set normal white-on-black text output

D P OPEN GOTO $n$ Branch ine $n$ if error occurs
Begin RLAD or WRITE of a text file
I OR Logical "or" in an IF statement
AI $\operatorname{PDL}(\boldsymbol{n})$ Value (0.255) of paddle $n(0.3)$
PEEK ( $n$ ) Memory value at location $n$ PLOT $i, j$ Plot a lo-res dot
POKE $n, m$ Set location $n$ to value $m$
POP Cancel most recent GOSUB
POS(0) Horizontal cursor position
D P POSITION $f$ Locate READ or WRITE in file
A I D P PR\# $\boldsymbol{n}$ Send output to slot $n$
P PREFIX $f$ Change default directory
PRINT Skip a text line
A PRINT " $A B C^{\prime \prime}$ Print characters within quotes
A I PRINT $X$ Print value of variable $X$
A READ $\boldsymbol{A} \$$ Read a DATA string READ $X$ Read a dATA value
D P READ $f$ Initiate reading a disk text file
RECALL $X$ Retrieve array from tape
A I REM Programmer's remark follows
D P RENAME $f_{1}, f_{2}$ Rename a file on disk RESTORE Set pointer to first DATA element
P RESTORE $f$ Retrieve strings \& variables from file f
RESUME Continue program where error occurred RETURN Branch back to statement after GOSUB


A
RIGHT\$( $\boldsymbol{A} \$, n$ ) Last $n$ characters of a string RND(0) Repeat last random number
RND(1) Random number (0 to 0.999999999)
$\operatorname{RND}(n)+1$ Random integer between 1 and $n$
ROT $=\boldsymbol{n}$ Set rotation of a shape to $n$ (0-64)
A I RUN Execute program from beginning
I RUN $n$ Execute program from line n
D P RUN $\boldsymbol{f}$ Load and execute program from disk
SAVE Save program to tape
D P SAVE $f$ Save program to disk
SCALE $=n$ Set scale of DRAW or XDRAW
SCRN $(i, j)$ Lo-res screen color at point $i, j$
$\operatorname{SGN}(X)$ Sign $(+1,-1$ or 0 ) of $X$
SHLOAD Load shape table from tape
SIN $(x)$ Sine of $x$ in radians
$\operatorname{SPC}(n) n$ spaces in a PRINT statement
SPEED $=\boldsymbol{n}$ Character output rate ( $0-255$ )
SQR(x) Square root of $x$
STEP $n$ Increment-size in a FOR-NEXT loop STOP Halt program and print line number
P STORE $f$ Store variables \& strings as file $f$
STORE $X$ Store array on tape
STR $\$(x)$ String equivalent of value $x$
TAB $(n)$ Position cursor in a PRINT statement
TAB $n$ Position cursor at horizontal position $n$
TAN $(x)$ Tangent of $x$ in radians
TEXT switch to text mode; cancel windows
THEN Logical "then" in an IF statement
TO See FOR and HPLOT.
TRACE Print line numbers as executed
D P UNLOCK $\boldsymbol{f}$ Cancel LOCK
USR(x) Pass x to a machine subroutine
VAL(A\$) Numeric value of a string
D P VERIFY $f$ Verify a file on disk
I VLIN $n, m$ AT $i$ Draw a vertical lo-res line
VTAB $n$ Move cursor to text line n
WAIT $\mathrm{i}, \mathrm{j}, \mathrm{k}$ Insert conditional pause
D P WRITE $f$ Inititate writing to a disk text file
XDRAW $n$ AT $\boldsymbol{i}, \mathbf{j}$ DRAW in opposite color
A XPLOT (Unused Applesoft reserved word)

I \# Not equal to
P -f Execute file f, regardless of type
A ? Same as PRINT
CONTROL AND ESCAPE COMMANDS:
Stop an Applesoft or Integer program
A I control-G Beep the speaker
A I control-H Left-arrow (backspace)
control-I Tab (IIe/IIc software-controlled) control-J Down-arrow (line feed) control-K Up-arrow (IIe/IIc software-controlled) control-M Carriage return control-U Right-arrow (forward space) control-X Cancel line being typed control-[ Escape (see esc commands below)

| A I | esc-@ | Clear text screen; leave no prompt |
| :--- | :--- | :--- |
| A I | esc-A | Move cursor one space right |
| A I | esc-B | Move cursor one space left |
| A I | esc-C | Move cursor one space down |
| A I | esc-D | Move cursor one space up |
| A I | esc- $\uparrow$ | (or esc-I) Move cursor up; recursive |
| A I | esc- - | (or esc-J) Move cursor left; recursive |
| A I | esc- $\rightarrow$ | (or esc-K) Move cursor right; recursive |
| A I | esc- $\downarrow$ | (or esc-M) Move cursor down; recursive |

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