Apple Lisa Phrase File Internal Structure

Written by

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1988

INTRODUCTION

This document describes the internal structure of Apple Computer's Lisa Phrase files. Phrase files contain all the textual information that the Lisa Office System tools display to the user. This information consists of menu titles, alert messages and button titles, and Desktop icon names. Phrase files are generated using an Apple program that runs within the Lisa Development environment, the Workshop. This program converts a Text file containing various phrases into a compact phrase file. A sample phrase file is completely documented using both a listing of the raw hexadecimal values within the file and the Text (i.e., human readable) version of the same file.

This document can be of some use to those people who wish to understand the Lisa's operation better and/or who wish to use this information within programs that they develop for other machines. For example, the Lisa Office System tools contain many clearly—written phrases whose wording can be used or imitated in newer programs.

NOTE
The information contained within this document was obtained by a careful analysis of many phrase files. Since the author is in no way associated with Apple Computer this information may be in error. Where discrepancies exist their nature and location are clearly noted.

PHRASE FILE DISASSEMBLER

To better understand phrase files I wrote a Workshop program in Lisa Pascal titled PhraseDisasm that disassembles the contents of phrase files into a readable Text file. This program generated both the raw hexadecimal listing and the Text listing contained within this document. This program can handle both older and newer phrase files from the Lisa Office System.

INTERNAL STRUCTURE

Phrase files are composed of textual phrases arranged in a compact format. This format is divisible into several sequentual sections with each section containing specific phrase—related information. Each section is illustrated with structure diagrams that describe the exact layout of the section's data. These diagrams contain a description of the data and its size in bytes. Sizes denoted by "?" mean their sizes vary. Strings contain a length byte followed by the actual character data for the string. Descriptions followed by "(???)" are not fully understood and need future clarification (if possible).

The sections of a phrase file are as follows:

1. Menu Phrase Section
2. Miscellaneous Section 1
3. Miscellaneous Section 2
4. Icon Phrase Section
5. Alert Button Phrase Section
6. Alert Phrase Information Section
7. Alert Phrase Section

1. Menu Phrase Section

This section contains the menu phrases for a tool. The first integer (2 bytes) in the phrase file contains a count of the number of menu subsections present in this section. Each subsection contains the data for a complete pull-down menu. The subsection structure follows:

Description	Size
Menu ID	2
Menu enable flags	4
Menu length (in bytes)	2
Menu title string	?
Menu item # 1 title string	?
Menu item # 1 keyboard command ($20 = none)	1
Menu item # 1 flags or type style (???)	2
...	...
Menu item # N title string	?
Menu item # N keyboard command ($20 = none)	1
Menu item # N flags or type style (???)	2

Sometimes this section is not present in a phrase file. For example, phrase file "System.DW.Phrase", the phrases for the Daisy Wheel printer, does not have a menu section. To test whether the menu section exists test if the menu count integer is greater than 31. If this is true, then this section does not exist. If the menu count is less than or equal to 31, then test the second file integer (31 is a special number here since the maximum number of menus that the Lisa Menu Manager can handle is 31. Thus, I didn't pick this value randomly!). If this integer (usually holds the menu ID value) is greater than 255 (a random value that I chose since it is fairly large and no menu ID should be this large), then the menu section does not exist. For example, the phrase file titled "InstallPhrase" from the Lisa-to-Macintosh Migration Kit disk # 1 contained the following integers: $0001 and $013F. In this case I ignored the $0001 value (I'm not certain what it means) and disassembled the data as the Icon Phrase Section.

2. Miscellaneous Section 1

This section contains a table of records each with 2 integers (4 bytes). If the first integer in this section equals zero ($0000), then this section does not exist and the zero integer can be viewed as a menu ID that terminates the Menu Phrase Section. If the first integer equals a non-zero value, then the value is the count of the number of

records in this section. I'm not certain what this section data defines, but I believe it to be a remnant from an older phrase file. This table has only been found in the Scrapbook tool and the Lisa—to—Macintosh tool. I believe this section is also present in the older Office System 2.0 tools, but since I have not looked at phrase files from this version I cannot be 100% certain.

3. Miscellaneous Section 2
This section contains 3 integers (6 bytes) whose values are currently meaningless. I believe they deal with the heap space needed by the phrase file.

4. Icon Phrase Section
This section contains a list of the 5 titles needed by the alert box icons. These title strings correspond to the "?", "Wait", "Stop", "Note", and "Caution" icon titles. Each subsection has the following format:

Description	Size
Icon title string	16
No. of long integers minus 1 of data (N-1)	2
Long integer data	N*4

The long integer data values appear to describe the shape of the icon that is associated with the specific icon type. For example, the Stop icon has the shape of an octagon.

5. Alert Button Phrase Section
This section contains a list of the phrases that should appear within alert buttons. The first integer contains the number minus 1 of the button title strings. Each string always occupies 16 bytes (1 for the length byte and 15 for the title bytes) even if the title has less than 15 characters.

6. Alert Phrase Information Section
This section contains a table of records each with 3 integers (6 bytes). These records describe the ID value, the alert stage values, and the length of the alert phrases in the Alert Phrase Section that is mentioned below. The first integer of this section contains the number of records within this section. Each record has the following format:

Description	Size
Alert phrase ID	2
Alert stages data (???)	2
Alert phrase data length	2

I believe the alert stages data describes the type of alert to display (e.g., Caution alert) and its sound stages in a manner similar to the Macintosh dialog sound alert method. The alert phrase data length contains the number of bytes that the phrase requires. If the length is negative, then the phrase is unused (in my phrase file disassemblies I mark negative length phrases with the phrase "<Phrase has length of zero>").

7. Alert Phrase Section

This section contains the phrases that are displayed when a tool shows an alert box to the user. The majority of a phrase file is occupied by this data since the majority of Lisa tools require a lot of phrases in order to be user-friendly. Each phrase in this section contains several sequential substrings. The total length of each phrase in bytes is given by the Alert Phrase Information Section from above. Several special characters are used within the phrases for special purposes. ASCII character $FF represents a Line Feed (marked in the phrase listing by a "\L"). ASCII characters in the range $F0-$FE correspond to parameter phrases which will replace the ASCII occurrence when the phrase is displayed within an alert box. These are marked in the phrase listing by "\Fx" where "x" is a hexadecimal digit.

SAMPLE PHRASE FILE RAW HEXADECIMAL DUMP

This listing came from the Lisa Clock phrase file ("{T13}Phrase") from the Lisa Office System 3.1 (a.k.a., Lisa 7/7). All values are in hexadecimal with each 16 byte line followed by the ASCII equivalents.

```
Hex Dump of file "{t13}phrase"

Address  0    2    4    6    8    A    C    E     ASCII
-------- ---- ---- ---- ---- ---- ---- ---- ----  ----------------
000000:  0001 0001 77FF FFFF 00A6 0A46 696C 652F  [.....w......File/]
000010:  5072 696E 7414 5365 7420 4173 6964 6520  [Print.Set Aside ]
000020:  4576 6572 7974 6869 6E67 2000 2011 5365  [Everything . .Se]
000030:  7420 4173 6964 6520 2243 6C6F 636B 2220  [t Aside "Clock" ]
000040:  0020 012D 2000 200F 5361 7665 2026 2050  [. .- . .Save & P]
000050:  7574 2041 7761 7920 0020 0F53 6176 6520  [ut Away . .Save ]
000060:  2620 436F 6E74 696E 7565 2000 201A 5265  [& Continue . .Re]
000070:  7665 7274 2074 6F20 5072 6576 696F 7573  [vert to Previous]
000080:  2056 6572 7369 6F6E 2000 2001 2020 0020  [ Version . .- . ]
000090:  1740 6F6E 6974 6F72 2074 6865 2050 7269  [.Monitor the Pri]
0000A0:  6E74 6572 202E 2E2E 2000 2000 DCFD DC01  [nter ... . .....]
0000B0:  0000 0003 076C 0002 013F 2020 2020 2020  [.....l...?      ]
0000C0:  2020 2020 2020 2020 0004 002C 0042 000A  [         ..,.B..]
0000D0:  0042 002C 0075 004E 0042 002C 000F 0457  [.B.,.u.N.B.,...W]
0000E0:  6169 7420 2020 2020 2020 2020 2020 0008  [ait           ..]
0000F0:  0019 0042 004E 0041 004E 0043 000C 0074  [...B.N.A.N.C...t]
000100:  000B 0074 000A 0073 000A 0011 000B 0010  [...t...s........]
000110:  000C 0010 0453 746F 7020 2020 2020 2020  [.....Stop       ]
000120:  2020 2020 0008 002C 0042 000A 0057 001E  [    ..,.B...W..]
000130:  0075 003A 0075 004E 0057 004E 002D 003A  [.u.:.u.N.W.N.-.:]
000140:  000F 001E 000F 000A 002D 044E 6F74 6520  [.........-.Note ]
000150:  2020 2020 2020 2020 2020 0004 002C 0042  [          ..,.B]
000160:  0014 001E 0014 0066 0044 0066 0044 001E  [.......f.D.f.D..]
000170:  0743 6175 7469 6F6E 2020 2020 2020 2020  [.Caution        ]
000180:  0008 0044 0042 0007 0041 0007 0043 004F  [...D.B...A...C.O]
000190:  0079 0050 0079 0051 0078 0051 000C 0050  [.y.P.y.Q.x.Q...P]
0001A0:  0008 004F 000B 0001 0643 616E 6365 6C20  [...O.....Cancel ]
0001B0:  2020 2020 2020 2020 024F 4B20 2020 2020  [         .OK     ]
0001C0:  2020 2020 2020 2020 000F 0001 5F00 006E  [         ...._..n]
0001D0:  0002 4F00 015B 0003 4F00 FFFF 0004 3F00  [..O..[..O....?.]
0001E0:  FFFF 0063 476A 005F 0064 476A 005F 0065  [...cGj._.dGj._.e]
0001F0:  476A 0061 0066 476A 005D 0067 476A 0060  [Gj.a.fGj.].gGj.`]
```

```
Address 0    2    4    6    8    A    C    E       ASCII
------- ---- ---- ---- ---- ---- ---- ---- ----  ----------------
000200: 0068 476A 006D 0069 476A 0060 006A 476A  [.hGj...iGj.`.jGj]
000210: 010E 006B 4F00 0036 006D 0000 000D 006E  [...kO..6.m.....n]
000220: 0000 0006 0454 6865 2006 436C 6F63 6B20  [.....The .Clock ]
000230: 0663 6F75 6C64 2004 6E6F 7420 0566 696E  [.could .not .fin]
000240: 6420 0474 6865 2008 6D65 7373 6167 6520  [d .the .message ]
000250: 0574 6861 7420 0773 686F 756C 6420 0761  [.that .should .a]
000260: 7070 6561 7220 0768 6572 652E 2020 0349  [ppear .here.  .I]
000270: 6620 0479 6F75 2004 6172 6520 0775 6E61  [f .you .are .una]
000280: 626C 6520 0374 6F20 0970 726F 6365 6564  [ble .to .proceed]
000290: 2C20 0863 6F6E 7461 6374 2002 6120 0A71  [, .contact .a .q]
0002A0: 7561 6C69 6669 6564 2008 7365 7276 6963  [ualified .servic]
0002B0: 6520 1072 6570 7265 7365 6E74 6174 6976  [e .representativ]
0002C0: 652C 2004 616E 6420 086D 656E 7469 6F6E  [e, .and .mention]
0002D0: 2004 7468 6520 076E 756D 6265 7220 FC02  [ .the .number ..]
0002E0: 2E20 0454 6865 2005 4C69 7361 2003 6973  [. .The .Lisa .is]
0002F0: 2007 6861 7669 6E67 200A 7465 6368 6E69  [ .having .techni]
000300: 6361 6C20 0064 6966 6669 6375 6C74 6965  [cal .difficultie]
000310: 7320 0A61 6363 6573 7369 6E67 2004 7468  [s .accessing .th]
000320: 6520 0873 7461 7274 7570 2007 6469 736B  [e .startup .disk]
000330: 2E20 2004 5075 7420 0561 7761 7920 0579  [.   .Put .away .y]
000340: 6F75 7220 0A64 6F63 756D 656E 7473 2004  [our .documents .]
000350: 6F6E 6520 0361 7420 0261 2005 7469 6D65  [one .at .a .time]
000360: 2003 6F72 2005 7075 7368 2004 7468 6520  [ .or .push .the ]
000370: 054C 6973 6120 076F 6E2D 6F66 6620 0762  [.Lisa .on-off .b]
000380: 7574 746F 6E20 0374 6F20 0573 6176 6520  [utton .to .save ]
000390: 0574 6865 6D20 0561 6C6C 2E20 FFFF 0349  [.them .all. ...I]
0003A0: 6620 0474 6865 2008 7072 6F62 6C65 6D20  [f .the .problem ]
0003B0: 0872 6563 7572 732C 2006 7265 6665 7220  [.recurs, .refer ]
0003C0: 0374 6F20 0474 6865 2005 4C69 7361 2007  [.to .the .Lisa .]
0003D0: 4F66 6669 6365 2007 5379 7374 656D 2008  [Office .System .]
0003E0: 6D61 6E75 616C 2C20 0941 7070 656E 6469  [manual, .Appendi]
0003F0: 7820 0341 2C20 074F 6666 6963 6520 0753  [x .A, .Office .S]

Address 0    2    4    6    8    A    C    E       ASCII
------- ---- ---- ---- ---- ---- ---- ---- ----  ----------------
000400: 7973 7465 6D20 0645 7272 6F72 200A 4D65  [ystem .Error .Me]
000410: 7373 6167 6573 2C20 0675 6E64 6572 2008  [ssages, .under .]
000420: 4469 6666 6963 756C 7479 200A 4163 6365  [Difficulty .Acce]
000430: 7373 696E 6720 0844 6973 6B2E 2004 5468  [ssing .Disk. .Th]
000440: 6520 0568 6F75 7220 056D 7573 7420 0362  [e .hour .must .b]
000450: 6520 0261 2007 6E75 6D62 6572 2008 6265  [e .a .number .be]
000460: 7477 6565 6E20 0230 2004 616E 6420 0432  [tween .0 .and .2]
000470: 332E 20FF FF04 5468 6520 056C 6173 7420  [3. ...The .last ]
000480: 0A6B 6579 7374 726F 6B65 2004 7761 7320  [.keystroke .was ]
000490: 0864 6973 6361 7264 6564 2E20 0454 6865  [.discarded. .The]
0004A0: 2005 686F 7572 2005 6D75 7374 2003 6265  [ .hour .must .be]
0004B0: 2002 6120 076E 756D 6265 7220 0862 6574  [ .a .number .bet]
0004C0: 7765 656E 2002 3120 0461 6E64 2004 3132  [ween .1 .and .12]
0004D0: 2E20 FFFF 0454 6865 2005 6C61 7374 200A  [. ...The .last .]
0004E0: 6865 7973 7472 6F6B 6520 0477 6173 2008  [keystroke .was .]
0004F0: 6469 7363 6172 6465 642E 2004 5468 6520  [discarded. .The ]
000500: 076D 696E 7574 6520 056D 7573 7420 0362  [.minute .must .b]
```

Lisa Phrase File Internal Structure [Oct. 1988]   - 5 -

```
000510: 6520 0261 2007 6E75 6D62 6572 2008 6265  [e .a .number .be]
000520: 7477 6565 6E20 0230 2004 616E 6420 0435  [tween .0 .and .5]
000530: 392E 20FF FF04 5468 6520 056C 6173 7420  [9. ...The .last ]
000540: 0A6B 6579 7374 726F 6B65 2004 7761 7320  [.keystroke .was ]
000550: 0864 6973 6361 7264 6564 2E20 0454 6865  [.discarded. .The]
000560: 2008 616D 2F70 6D20 0873 6574 7469 6E67  [ .am/pm .setting]
000570: 2003 6973 2008 6C69 6D69 7465 6420 0374  [ .is .limited .t]
000580: 6F20 0361 6D20 0461 6E64 2004 706D 2E20  [o .am .and .pm. ]
000590: FFFF 0454 6865 2005 6C61 7374 200A 6865  [...The .last .ke]
0005A0: 7973 7472 6F6B 6520 0477 6173 2008 6469  [ystroke .was .di]
0005B0: 7363 6172 6465 642E 2004 5468 6520 066D  [scarded. .The .m]
0005C0: 6F6E 7468 2005 6D75 7374 2003 6265 2002  [onth .must .be .]
0005D0: 6120 076E 756D 6265 7220 0862 6574 7765  [a .number .betwe]
0005E0: 656E 2002 3120 0461 6E64 2004 3132 2E20  [en .1 .and .12. ]
0005F0: FFFF 0454 6865 2005 6C61 7374 200A 6865  [...The .last .ke]
```

Address	0	2	4	6	8	A	C	E	ASCII

```
000600: 7973 7472 6F6B 6520 0477 6173 2008 6469  [ystroke .was .di]
000610: 7363 6172 6465 642E 2004 5468 6520 0464  [scarded. .The .d]
000620: 6179 2005 6D75 7374 2003 6265 2002 6120  [ay .must .be .a ]
000630: 076E 756D 6265 7220 0862 6574 7765 656E  [.number .between]
000640: 2002 3120 0461 6E64 2004 3238 2C20 0432  [ .1 .and .28, .2]
000650: 392C 2004 3330 2C20 036F 7220 0433 312C  [9, .30, .or .31,]
000660: 200A 6465 7065 6E64 696E 6720 036F 6E20  [ .depending .on ]
000670: 0474 6865 2007 6D6F 6E74 682E 20FF FF04  [.the .month. ...]
000680: 5468 6520 056C 6173 7420 0A6B 6579 7374  [The .last .keyst]
000690: 726F 6B65 2004 7761 7320 0864 6973 6361  [roke .was .disca]
0006A0: 7264 6564 2E20 0454 6865 2005 7965 6172  [rded. .The .year]
0006B0: 2005 6D75 7374 2003 6265 2002 6120 076E  [ .must .be .a .n]
0006C0: 756D 6265 7220 0862 6574 7765 656E 2003  [umber .between .]
0006D0: 3831 2004 616E 6420 0439 352E 20FF FF04  [81 .and .95. ...]
0006E0: 5468 6520 056C 6173 7420 0A6B 6579 7374  [The .last .keyst]
0006F0: 726F 6B65 2004 7761 7320 0864 6973 6361  [roke .was .disca]
000700: 7264 6564 2E20 0454 6865 2004 5461 6220  [rded. .The .Tab ]
000710: 0461 6E64 2006 456E 7465 7220 056B 6579  [.and .Enter .key]
000720: 7320 0577 696C 6C20 0861 6476 616E 6365  [s .will .advance]
000730: 2004 7468 6520 0A73 656C 6563 7469 6F6E  [ .the .selection]
000740: 2003 746F 2004 7468 6520 056E 6578 7420  [ .to .the .next ]
000750: 0766 6965 6C64 2E20 0454 6865 200A 4261  [.field. .The .Ba]
000760: 636B 7370 6163 6520 046B 6579 2005 7769  [ckspace .key .wi]
000770: 6C6C 2005 6D6F 7665 2004 7468 6520 0A73  [ll .move .the .s]
000780: 656C 6563 7469 6F6E 2003 746F 2004 7468  [election .to .th]
000790: 6520 0A70 7265 6365 6469 6E67 2008 6669  [e .preceding .fi]
0007A0: 656C 642E 2020 0454 6865 2007 5265 7475  [eld.  .The .Retu]
0007B0: 726E 2004 6B65 7920 0577 696C 6C20 056D  [rn .key .will .m]
0007C0: 6F76 6520 0474 6865 200A 7365 6C65 6374  [ove .the .select]
0007D0: 696F 6E20 0374 6F20 0474 6865 2005 686F  [ion .to .the .ho]
0007E0: 7572 2007 6669 656C 642E 20FF FF04 5468  [ur .field. ...Th]
0007F0: 6520 056C 6173 7420 0A6B 6579 7374 726F  [e .last .keystro]
```

Address	0	2	4	6	8	A	C	E	ASCII

```
000800: 6B65 2004 7761 7320 0864 6973 6361 7264  [ke .was .discard]
000810: 6564 2E20 0454 6865 2006 436C 6F63 6B20  [ed. .The .Clock ]
```

Lisa Phrase File Internal Structure [Oct. 1988]   - 6 -

```
000820:  0663 6F75 6C64 2004 6E6F 7420 0362 6520  [.could .not .be ]
000830:  0473 6574 2003 6173 2004 796F 7520 0872  [.set .as .you .r]
000840:  6571 7565 7374 6564 2E20 0C2F 3A2F 2F61  [equested. ./://a]
000850:  602F 706D 2F31 3205 6D64 7930 2F29 312C  [m/pm/12.mdy0/)1, ]
000860:  200A 6465 7065 6E64 696E 6720 036F 6E20  [ .depending .on ]
000870:  0474 6865 2007 6D6F 6E74 682E 20FF FF04  [.the .month. ...]
000880:  5468 6520 056C 6173 7420 0A6B 6579 7374  [The .last .keyst]
000890:  726F 6865 2004 7761 7320 0864 6973 6361  [roke .was .disca]
0008A0:  7264 6564 2E20 0454 6865 2005 7965 6172  [rded. .The .year]
0008B0:  2005 6D75 7374 2003 6265 2002 6120 076E  [ .must .be .a .n]
0008C0:  756D 6265 7220 0862 6574 7765 656E 2003  [umber .between .]
0008D0:  3831 2004 616E 6420 0439 352E 20FF FF04  [81 .and .95. ...]
0008E0:  5468 6520 056C 6173 7420 0A6B 6579 7374  [The .last .keyst]
0008F0:  726F 6865 2004 7761 7320 0864 6973 6361  [roke .was .disca]
000900:  7264 6564 2E20 0454 6865 2004 5461 6220  [rded. .The .Tab ]
000910:  0461 6E64 2006 456E 7465 7220 0568 6579  [.and .Enter .key]
000920:  7320 0577 696C 6C20 0861 6476 616E 6365  [s .will .advance]
000930:  2004 7468 6520 0A73 656C 6563 7469 6F6E  [ .the .selection]
000940:  2003 746F 2004 7468 6520 056E 6578 7420  [ .to .the .next ]
000950:  0766 6965 6C64 2E20 0454 6865 200A 4261  [.field. .The .Ba]
000960:  636B 7370 6163 6520 046B 6579 2005 7769  [ckspace .key .wi]
000970:  6C6C 2005 6D6F 7665 2004 7468 6520 0A73  [ll .move .the .s]
000980:  656C 6563 7469 6F6E 2003 746F 2004 7468  [election .to .th]
000990:  6520 0A70 7265 6365 6469 6E67 2006 6669  [e .preceding .fi]
0009A0:  656C 642E 2020 0454 6865 2007 5265 7475  [eld.  .The .Retu]
0009B0:  726E 2004 6865 7920 0577 696C 6C20 056D  [rn .key .will .m]
0009C0:  6F76 6520 0474 6865 200A 7365 6C65 6374  [ove .the .select]
0009D0:  696F 6E20 0374 6F20 0474 6865 2005 686F  [ion .to .the .ho]
0009E0:  7572 2007 6669 656C 642E 20FF FF04 5468  [ur .field. ...Th]
0009F0:  6520 056C 6173 7420 0A6B 6579 7374 726F  [e .last .keystro]
```

Finis

SAMPLE PHRASE FILE DISASSEMBLY

This listing came from the Lisa Clock phrase file ("{T13}Phrase") from the Lisa Office
System 3.1 (a.k.a. Lisa 7/7). This phrase file is in the New format and contains a Menu
Phrase Section. The Alert Phrase Information Section was read using my PhraseDisasm
program and made more readable as a table that includes the starting address of each
phrase. Notice the phrases with Length equal to 0. These originally had negative lengths
which I interpreted as meaning the phrase was unused.

```
string info table base address = $000001C8
str_count = 15
```

StrID	Kind	Length	Address
1	24320/$5F00	190	548/$00000224
2	20224/$4F00	347	738/$000002E2
3	20224/$4F00	0	1085/$0000043D
4	16128/$3F00	0	1085/$0000043D
99	18282/$476A	95	1085/$0000043D
100	18282/$476A	95	1180/$0000049C
101	18282/$476A	97	1275/$000004FB
102	18282/$476A	93	1372/$0000055C
103	18282/$476A	96	1465/$000005B9

```
104  18282/$476A    141    1561/$00000619
105  18282/$476A     96    1702/$000006A6
106  18282/$476A    270    1798/$00000706
107  20224/$4F00     54    2068/$00000814
109      0/$0000     13    2122/$0000084A
110      0/$0000      6    2135/$00000857
```

The real phrase file disassembly follows:

; Phrase File "{t13}phrase"

; ***** Menu phrases *****
; Menu count = 1

MENU # 1 <01110111111111111111111111111111111>
File/Print
Set Aside Everything
Set Aside "Clock"
-
Save & Put Away
Save & Continue
Revert to Previous Version
-
Monitor the Printer ...

; ***** Alert Icon phrases *****

; "?" icon phrase
?
; Icon words: 44 66 10 66 44 117 78 66 44 15
; "WAIT" icon phrase
Wait
; Icon words: 25 66 78 65 78 67 12 116 11 116 10 115 10 17 11 16 12 16
; "STOP" icon phrase
Stop
; Icon words: 44 66 10 87 30 117 58 117 78 87 78 45 58 15 30 15 10 45
; "NOTE" icon phrase
Note
; Icon words: 44 66 20 30 20 102 68 102 68 30
; "CAUTION" icon phrase
Caution
; Icon words: 68 66 7 65 7 67 79 121 80 121 81 120 81 12 80 11 79 11

; ***** Alert Button phrases *****
; # button phrases = 2

Cancel
OK

; ***** File Strings *****
; string count = 15

PHRASE # 1 <Kind $5F00>
The Clock could not find the message that should appear here. If you are
unable to proceed, contact a qualified service representative, and mention

Lisa Phrase File Internal Structure [Oct. 1988]   - 8 -

the number \FC.

PHRASE # 2 <Kind $4F00>
The Lisa is having technical difficulties accessing the startup disk.
Put away your documents one at a time or push the Lisa on-off button to
save them all. \L\LIf the problem recurs, refer to the Lisa Office System
manual, Appendix A, Office System Error Messages, under Difficulty Accessing
Disk.

PHRASE # 3 <Kind $4F00>
<Phrase has length of zero>

PHRASE # 4 <Kind $3F00>
<Phrase has length of zero>

PHRASE # 99 <Kind $476A>
The hour must be a number between 0 and 23. \L\LThe last keystroke was
discarded.

PHRASE # 100 <Kind $476A>
The hour must be a number between 1 and 12. \L\LThe last keystroke was
discarded.

PHRASE # 101 <Kind $476A>
The minute must be a number between 0 and 59. \L\LThe last keystroke was
discarded.

PHRASE # 102 <Kind $476A>
The am/pm setting is limited to am and pm. \L\LThe last keystroke was discarded.

PHRASE # 103 <Kind $476A>
The month must be a number between 1 and 12. \L\LThe last keystroke was
discarded.

PHRASE # 104 <Kind $476A>
The day must be a number between 1 and 28, 29, 30, or 31, depending on
the month. \L\LThe last keystroke was discarded.

PHRASE # 105 <Kind $476A>
The year must be a number between 81 and 95. \L\LThe last keystroke was
discarded.

PHRASE # 106 <Kind $476A>
The Tab and Enter keys will advance the selection to the next field. The
Backspace key will move the selection to the preceding field. The Return
key will move the selection to the hour field. \L\LThe last keystroke was
discarded.

PHRASE # 107 <Kind $4F00>
The Clock could not be set as you requested.

PHRASE # 109 <Kind $0000>
/://am/pm/12

PHRASE # 110 <Kind $0000>
mdy0/

; F I N I S

SUMMARY
This document has presented the results of my analysis of the internal structure of phrase files for the Apple Lisa computer. Most of the structure is known completely, but small portions are still a mystery. As time progresses I will attempt to rectify this lapse and this document will be made more complete.

<<< Finis >>>

Lisa Phrase File Internal Structure [Oct. 1988]   - 10 -