Doc# 114

Apple Lisa Information
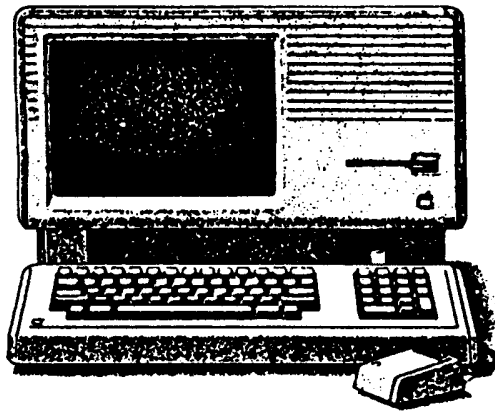
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Lisa Development Environments

─── DISK # ───

─── COMMENTS ───

Apple

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The *Lisa* Professional

Lisa Development Environments   5 Pages

Two Types of Programs on Lisa

"Vanilla"

Single-screen, Non-Window

User Interface Is Keyboard/Text-oriented

Displays Are Mainly Character/Text

Printed Output Of Text Only

Runs Under Control Of WorkShop Shell

VS

"Lisa-Like"

Window-Based: Multiple Overlapping Windows

User Interface Is Mouse/Menu/Graphic Oriented

Friendly Coexistence W/Other Lisa-Like Programs

Cut/Paste Information Between Applications

Fits the Office "Document" Model

Printed Output Of Hi-Res Graphics and Text

Runs Under Control Of Office DeskTop Manager

1-5

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The WorkShop Development Tools

WorkShop Shell

Command Interpreter

File Management Subsystem

System Management Subsystem

EXEC Files and Pre-Processor

Programming Languages

Pascal Compiler

BASIC-Plus Interpreter

COBOL-74 Interpreter

MC68000 Assembler

Program Development Tools

Lisa Text Editor

Program Linker

Low-Level Debugger

2-5

The WorkShop Development Tools

Utility Programs

File Comparison and Manipulation

Program Analysis and Debugging

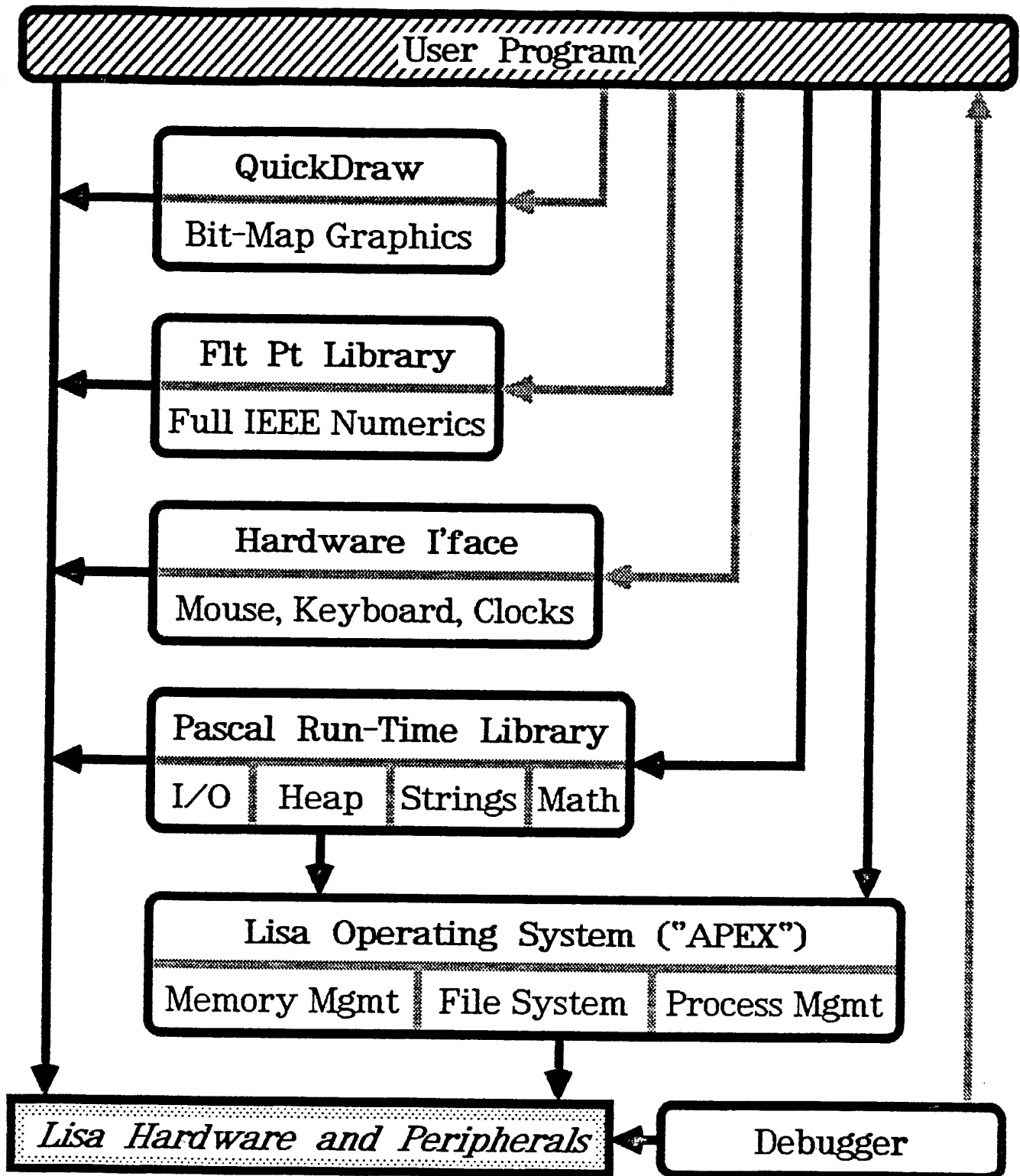TTY Emulation/File Catcher

Software Libraries

QuickDraw Graphics

Hardware Interface

IEEE Numerics

File I/O

Pascal Built-In I/O

Lisa O.S. File System

3-5

Lisa's "WorkShop" Environment

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User Program
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QuickDraw
Bit-Map Graphics

Flt Pt Library
Full IEEE Numerics

Hardware I'face
Mouse, Keyboard, Clocks

Pascal Run-Time Library
| I/O | Heap | Strings | Math |

Lisa Operating System ("APEX")
| Memory Mgmt | File System | Process Mgmt |

Lisa Hardware and Peripherals

Debugger

4-5

The Lisa WorkShop

Besides Apple, Who Will Use The WorkShop?

3rd Party Software Developers

o "Porting" existing software products to Lisa

o Developing new "Vanilla" software products

o Developing Lisa-style products using the WorkShop and the Lisa "ToolKit"

End User Customers

o Developing and/or Running their own Programs

o Running 3rd Party "Vanilla" Software Products

5-5

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