

What Remains Without Instructions

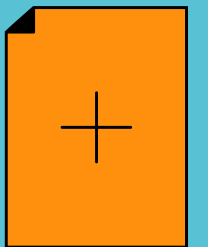
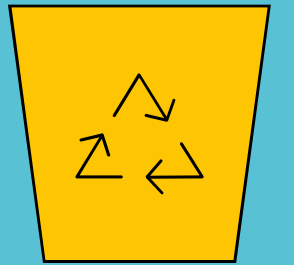
The Transfer Service and the
Preservation of Obsolete Digital
Media

Keynote, STEP-UP, 29th of June 2026



Dr. Leontien Talboom, Technical Analyst

START



UNIVERSITY OF
CAMBRIDGE

Libraries
and Archives



Digital Preservation

‘Digital Preservation Refers to the series of managed activities necessary to ensure continued access to digital materials for as long as necessary ...(digital preservation) refers to all of the actions required to maintain access to digital materials beyond the limits of media failure or technological and organisational change.’

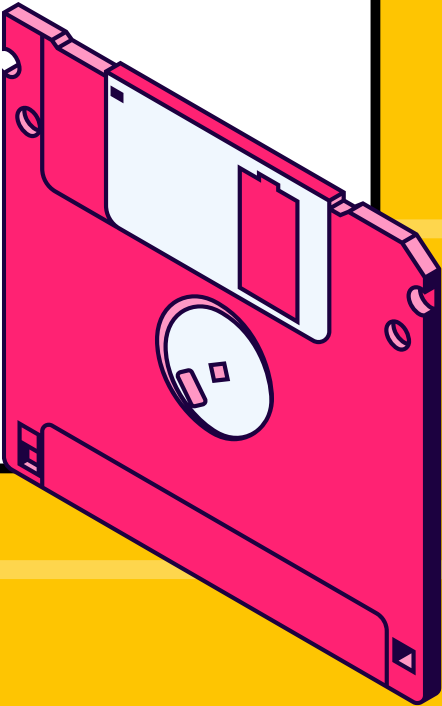
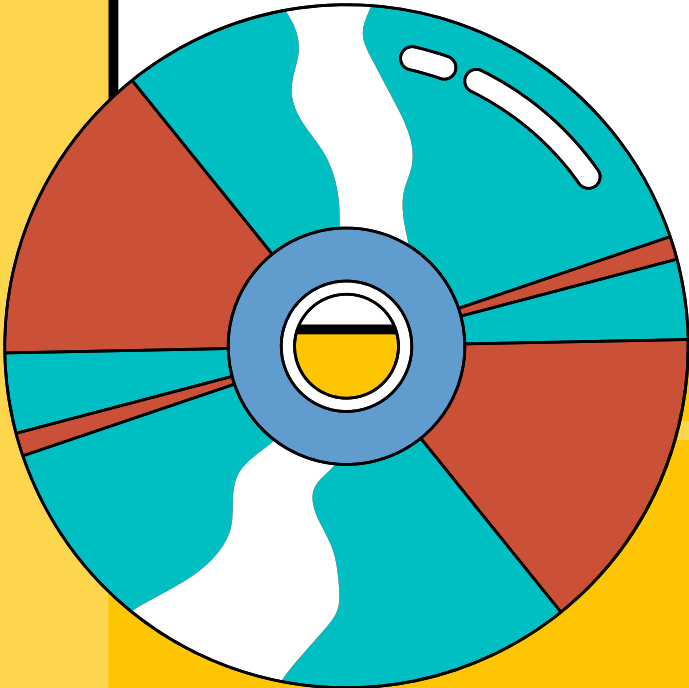
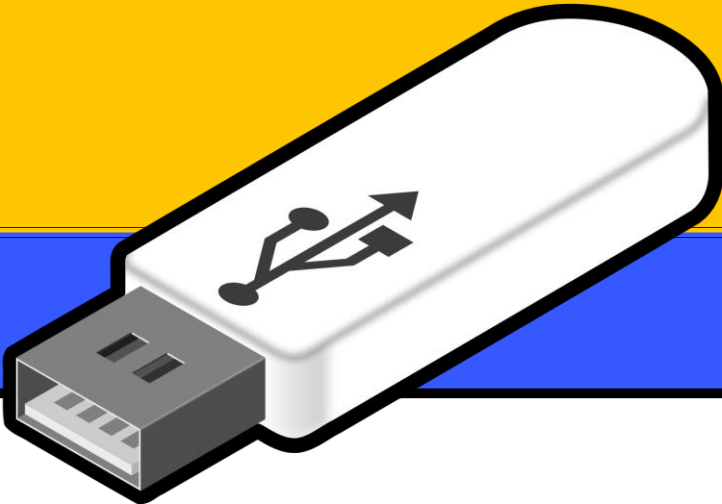
DPC Digital Preservation Handbook

Why is it important?

- Active management of data is needed to ensure future access. What is preservation without access?
- Committed resources are needed to store and maintain digital material
 - More and more content is created digitally

Why is not digital preservation?

- **Digital curation:** this is normally done during a research project. Digital preservation concerns itself when the material is saved for the long-term.
- **Digitisation:** digital files created during the digitisation process may end up in archives, but they are a different process.



The Transfer Service

Transfer Service

Started running in February
2023

Over 800 carriers have
been transferred

We have a dedicated lab
for this work

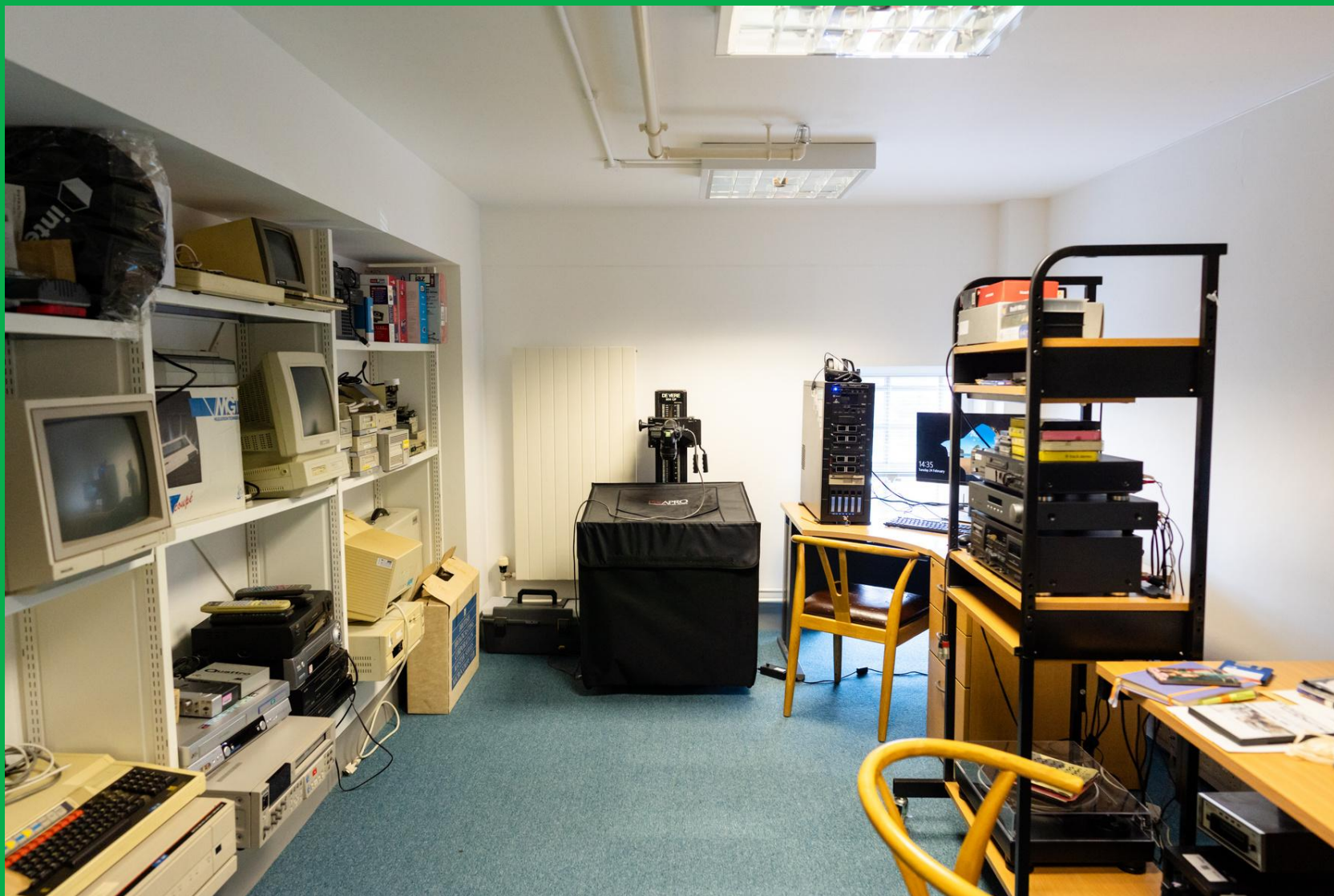
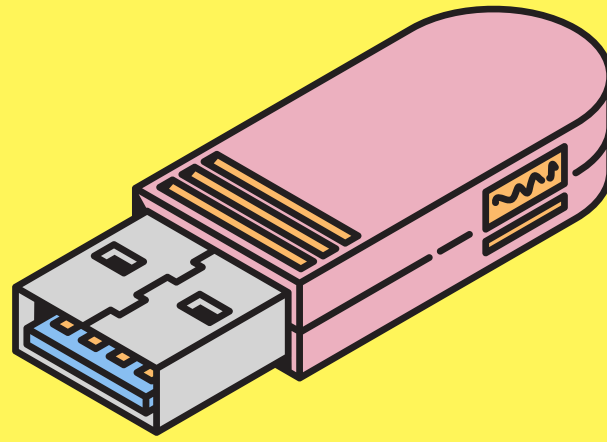
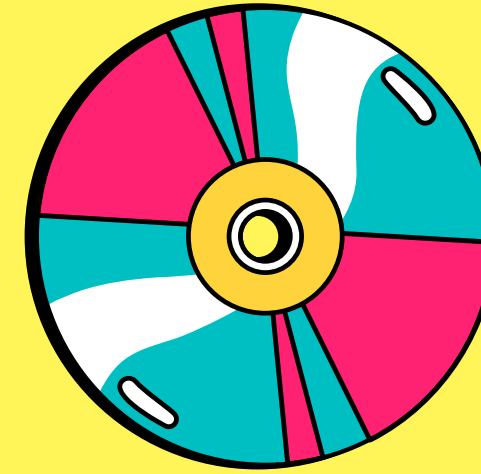


Photo Credit: Alice the Camera

***What can
we
process?***



USB-Sticks



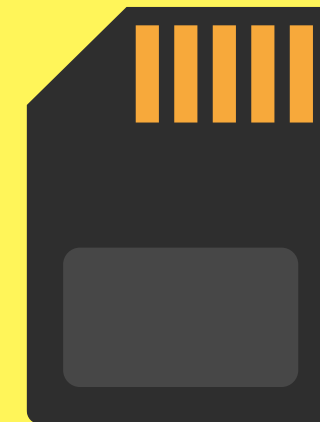
Optical Discs



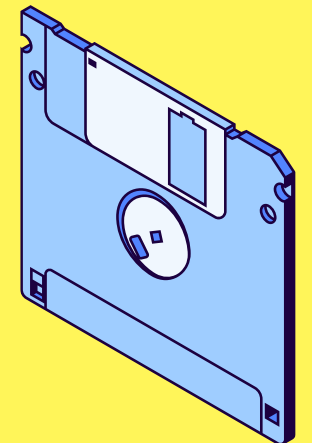
ZIP Disks



Hard Drives

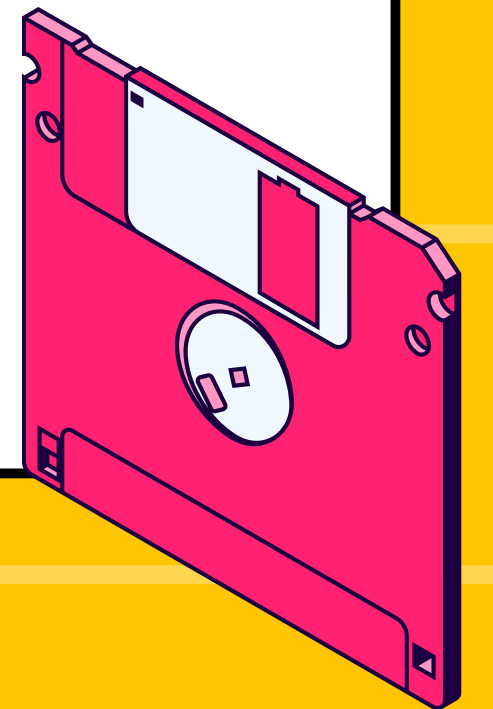
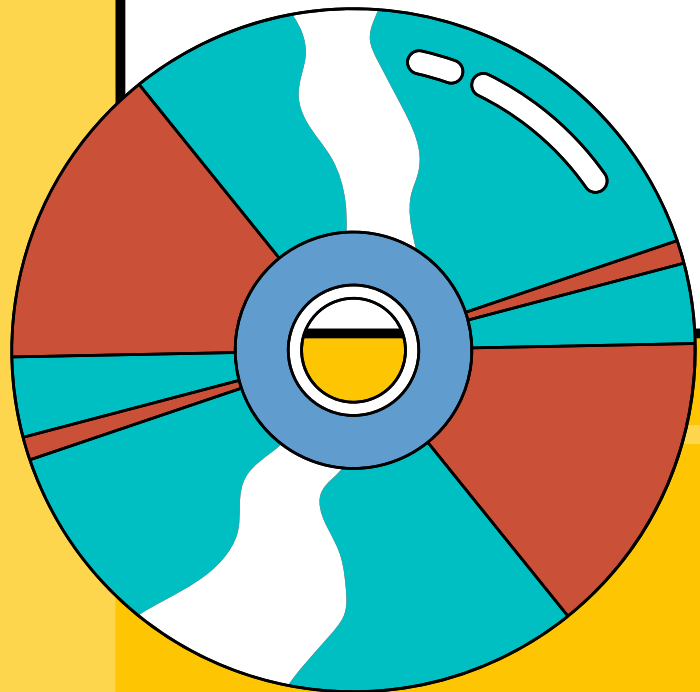


Memory Cards



Floppy Disks

Layers of Complexity



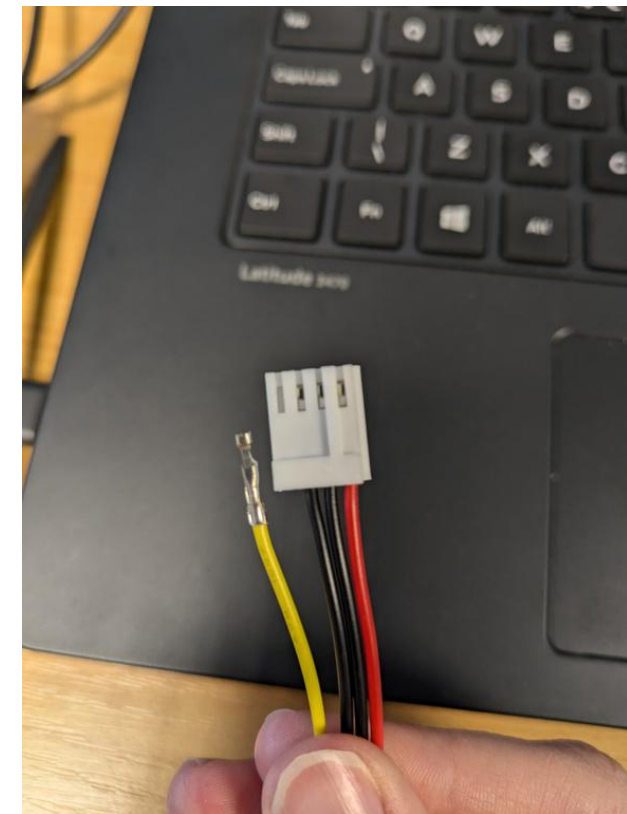
Elements that make it complicated

- **Hardware**
- **Operating system/file system**
- **Software dependencies**

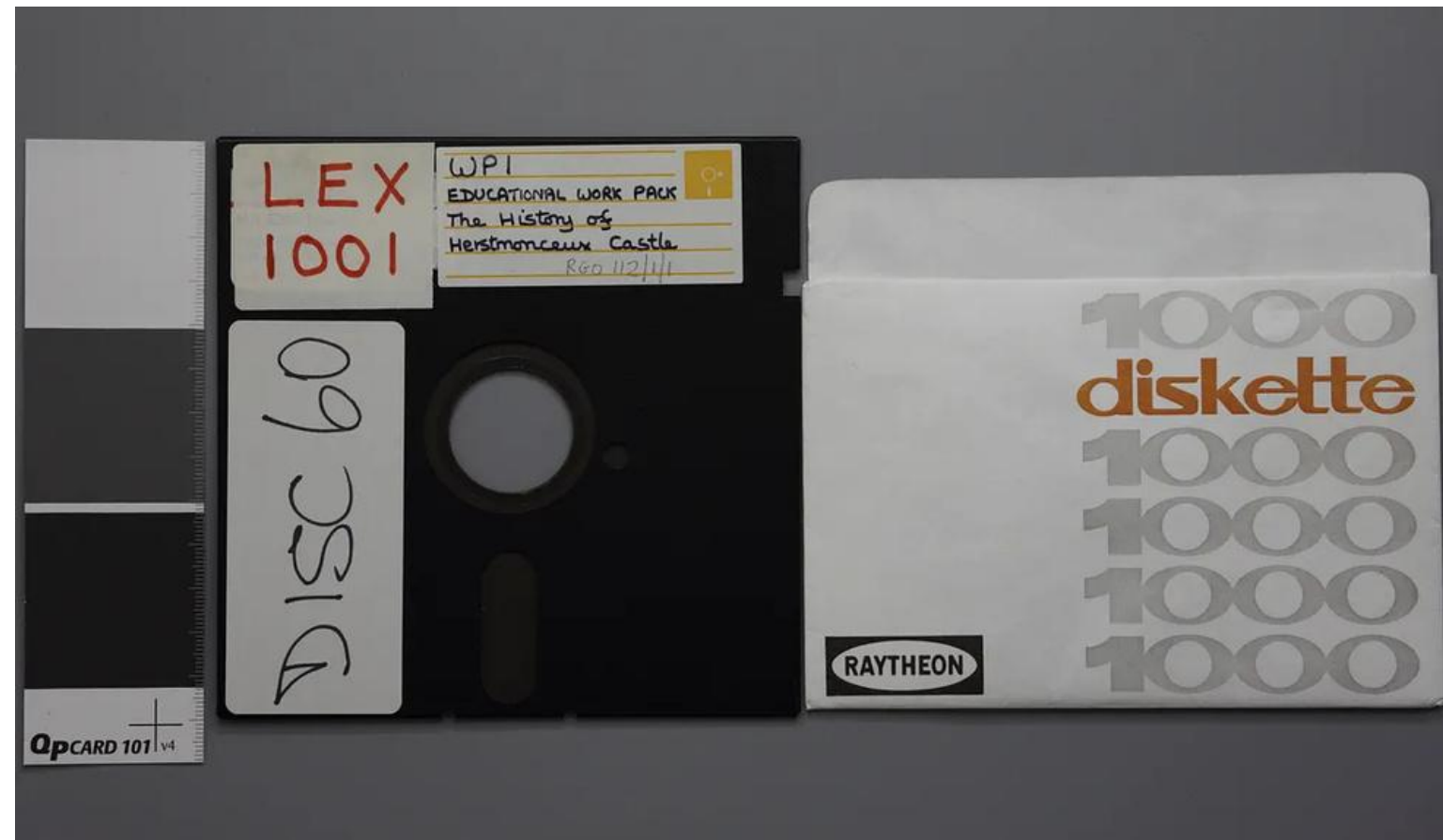


Photo Credit: Alice the Camera

Hardware - Amstrad (3-inch) Disks



File System - Lexitron



Software Dependencies - Emulators

```
Disc management. Printer idle. Using none.
C=Create new document I=Edit document P=Print document D=Direct printing
f1=Actions f2=Disc f3=File f4=Group f5=Document f6=Settings f7=Disc change f8=Options

Drive A: 136k used 37k free 30 files Drive B: not fitted 0k used 0k free 0 files Drive M: 28k used 34k free 4 files
A:LETTERS 21 files A:CONT 1 files A:TEMPLATE 8 files M: group 0 4 files
3 limbo files 0 limbo files 0 limbo files 0 limbo files
MEMO 2k MATRIX .WSS 11k
BIRMINGHAM.AMC 2k PAGENUM .CEN 1k MATRIX .PRI 15k
BRADCFB .1 3k PAGENUM .PR 1k 2 hidden 2k
BRFC .1 2k PAGENUM .RJ 1k
BURNLEY . 1k PHRASES .LET 1k
BURY .FC 3k PHRASES .NUL 1k
CHELSEA .FC 2k SHR .LET 2k
CPFCOW . 1k TEMPLATE.LAB 2k
LUF .BC1 2k
MANCITY . 2k
OAF .1 3k
PHRASES .STD 1k
PORTVALE.MM 2k
READ .ME 9k
SOUTHEND.SEX 1k
TRANMERE . 1k
VORKCITY.FC 1k
4 hidden 86k
```

```
DOSBox-X 2026.01.02: COMMAND - 3000 cycles/ms
Main CPU Video Sound DOS Drive Capture Debug Help

Welcome to DOSBox-X ! v2026.01.02, Visual Studio SDL1 64-bit

Getting started with DOSBox-X:

Type HELP to see the list of shell commands, INTRO for a brief introduction.
You can also complete various tasks in DOSBox-X through the drop-down menus.
Example: Try select the TrueType font or OpenGL pixel-perfect output option.

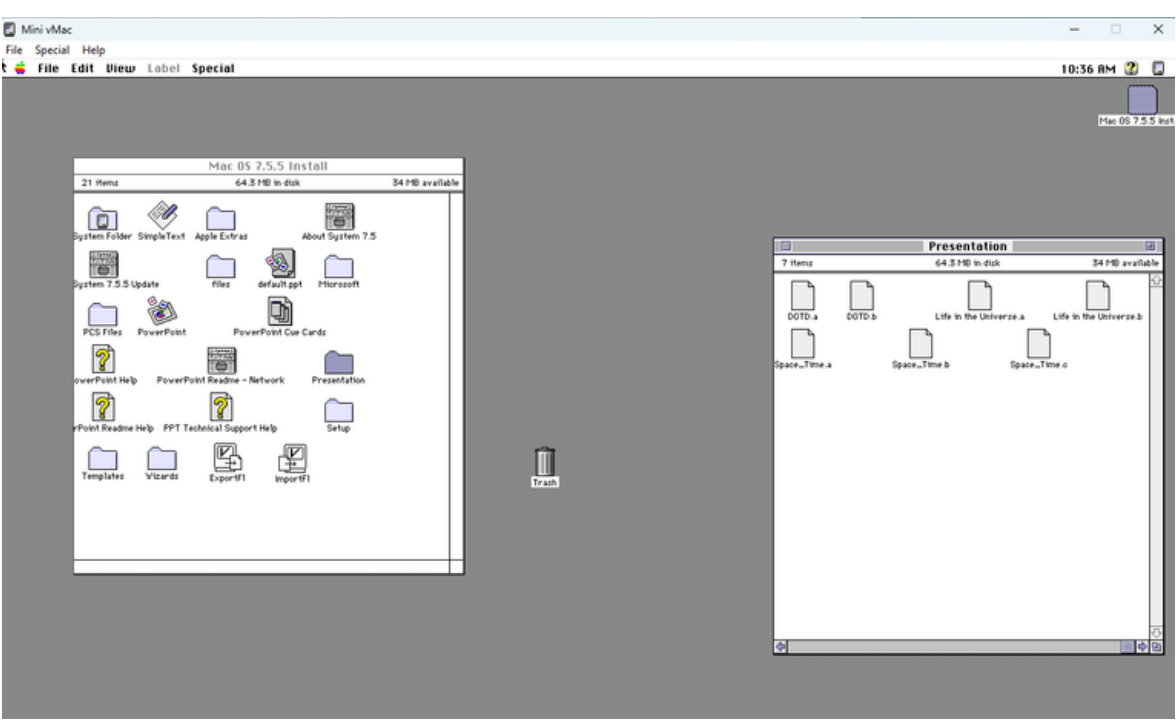
Useful default shortcuts:

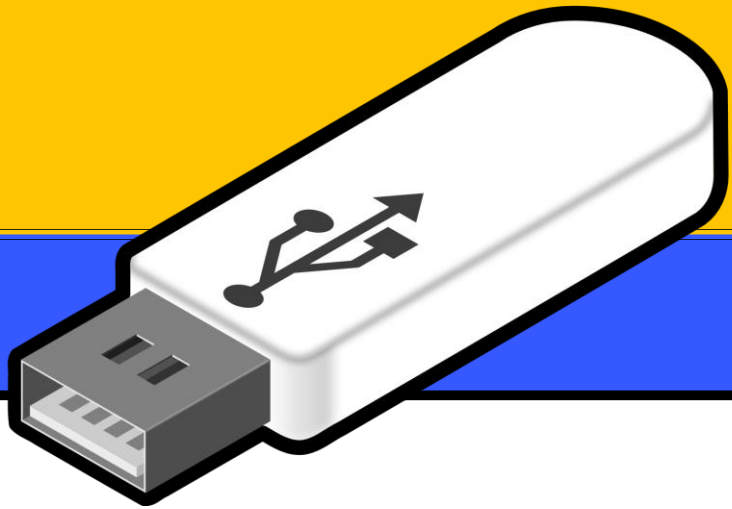
- switch between windowed and full-screen mode with key combination F11 + F
- launch Configuration Tool using F11 + C, and Mapper Editor using F11 + M
- increase or decrease the emulation speed with F11 + Plus or F11 + Minus

DOSBox-X project on the web:

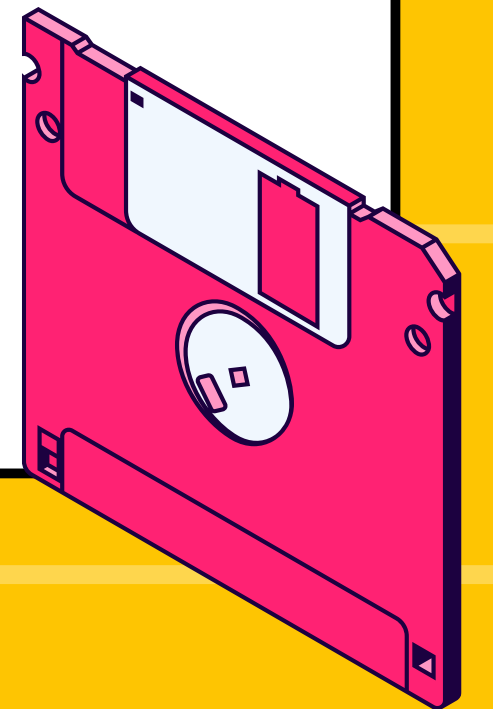
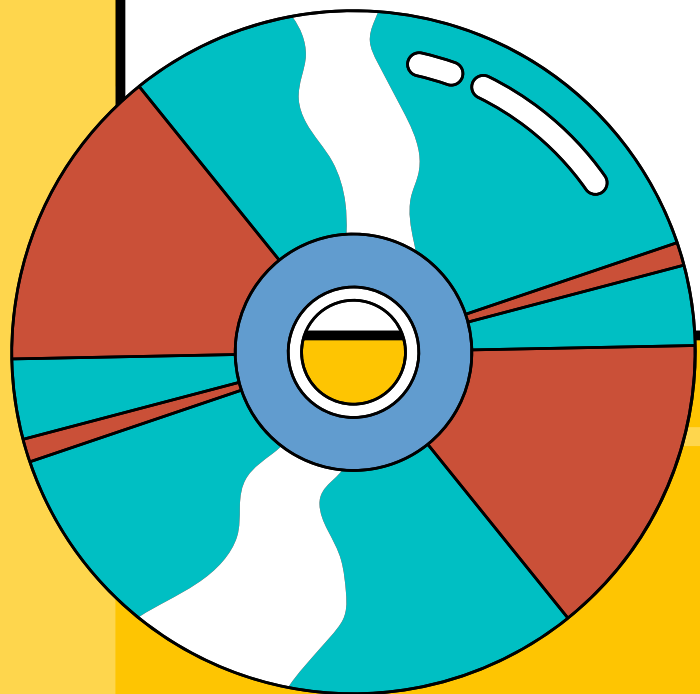
Homepage of project: https://dosbox-x.com/ Complete DOS emulations
User guides on Wiki: https://dosbox-x.com/wiki DOS, Windows 3.x and 9x
Issue or suggestion: https://github.com/joncampbell1123/dosbox-x/issues

HAVE FUN WITH DOSBox-X !
Z:\>
```





The added complexity of time



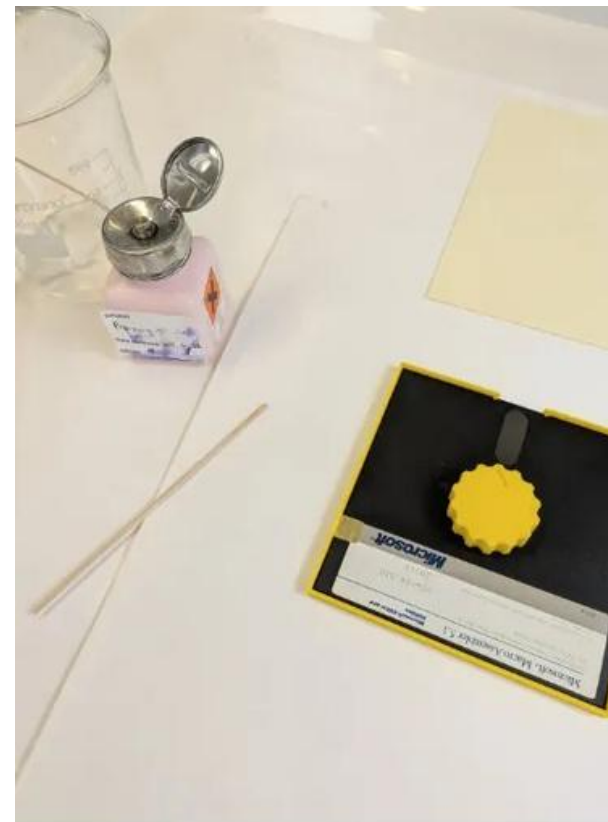
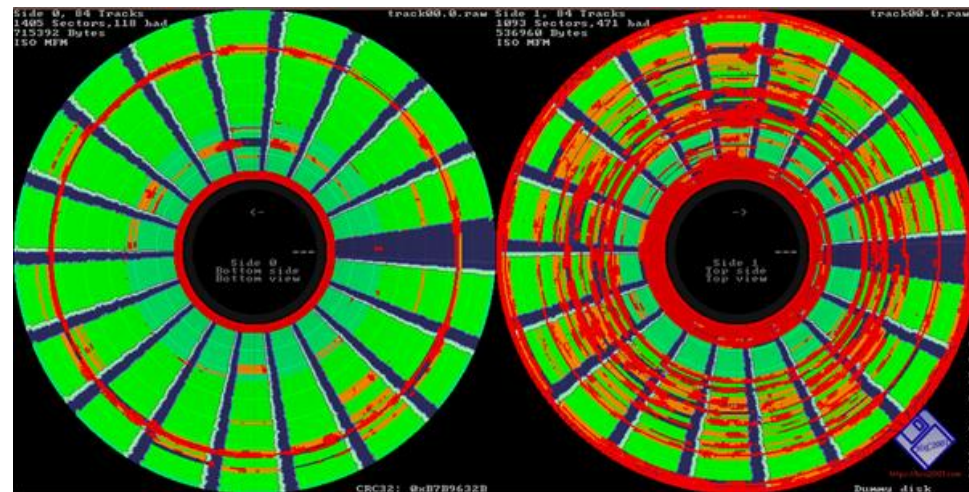
Time makes a number of things difficult

- **Degradation of disks/hardware**
- **Knowledge being lost**
- **The 'digital wave'**

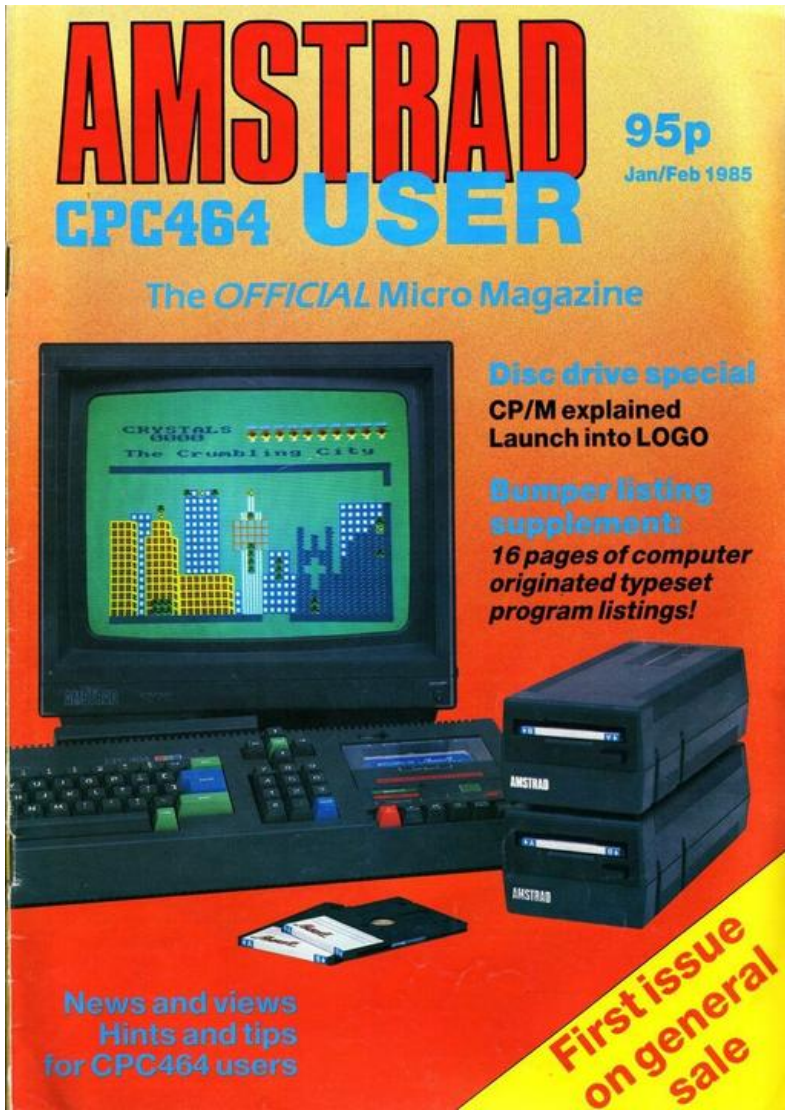


Photo Credit: Alice the Camera

Degradation of Disks/Hardware



Knowledge Being Lost - Nostalgic Machines



LisaList2

Welcome, Guest

September 16, 2025, 10:41:47 am

News: I've successfully built LOS from source! <https://lisaList2.com/index.php/topic,644.0.html>

HOME HELP SEARCH CALENDAR LOGIN REGISTER

LisaList2

General Category

	LisaList2 A group forum for Apple Lisa fans and related topics Child Boards: Building LOS From Source, Lisa Troubleshooting and Repair, Lisa Project Ideas, Marketplace, MacWorks Plus II, Lisa Workshop	3103 Posts 382 Topics	Last post by andrew in Re: Has anyone recreated... on September 13, 2025, 08:14:52 am
	LisaList1 Archive Archive of LisaList1 from previous incarnations (LEM/Google)	73491 Redirects	
	LisaFAQ Apple Lisa FAQ	63661 Redirects	

LisaList2 - Info Center

Forum Stats

4943 Posts in 667 Topics by 203 Members. Latest Member: Digitalrampage
Latest Post: "Re: Has anyone recreated..." (September 13, 2025, 08:14:52 am)
View the most recent posts on the forum.
[More Stats]

Users Online

876 Guests, 2 Users (3 Spiders)
Users active in past 60 minutes:
mactjaap, ned, Google (AdSense), Google (2)
Most Online Today: 1111. Most Online Ever: 2450 (July 12, 2024, 04:35:28 pm)



Knowledge Being Lost - Business Systems



At £1795 it can only be a Miracle

If you've been waiting for the right micro to come along at the right price, then the waiting is over. Every Miracle comes with all the software needed to make it a ready-to-run versatile business machine. Included are word processing, financial spreadsheets, data management and telecommunications products, PLUS MicroModeller, the world's leading modelling system.

This stylish British-built CP/M™ Micro compact enough to be carried in its shoulder bag for take-away computing. Yet it has a generous 10" screen and full size keyboard, and powerful enough to tackle your toughest business assignments with its twin 500K floppies and 128K of RAM (there's plenty room to grow, too).

The Miracle's advanced features make it faster and flashier than any of its rivals. Disk access times are up to 500 times speedier, and the

Miracle is so easy to operate you'll be using it productively an hour after you've first switched on, even if you've never touched a computer before.

If you're in the market for a micro - desk-top or portable - you should experience the Miracle now.

Return the coupon and we'll send you full details and arrange for you to experience a Miracle for yourself at your nearest dealer.



Miracle Specifications

Microprocessors

- CPU Z80A
- Speed 10MHz
- Z80A DMA (Direct Memory Addressing)
- Z80A SD
- Z80A PD
- Z80A CTC (Counter Timer Chip)
- 5 Expansion slots available
- SAN Industry standard Winchester hard disk interface (optional extra)

Memory

- RAM 128K (Cache utilises 64K)
- EPROM 4K
- 64K TPA
- 192K RAM board (optional extra)

Storage

- 2 Intelligent 5 1/4" Floppy disk drives, 500 Kb (unformatted), 400 Kb (formatted) each, single side, quad density

Ports

- Parallel: Centronics type
- Serial: Two RS232C
- RS422 (optional extra)

Screen

- 10" Green phosphor, 80 x 25 display; Brightness control and inverse video

Keyboard

- Sleekline and fully detachable
- 80 keys (107 legends) full QWERTY
- Separate numeric pad
- Separate (10) programmable keys
- Coloured keys for easy and fast storage

Dimensions

- Height 270mm (8 7/8")
- Width 360mm (12 1/4")
- Depth 195mm (7 1/4")
- Custom designed plastic casing

Software

- CP/M operating system
- Operating Guide (user friendly pre-processor)
- MicroCache (for vastly reduced disk access times)
- MenuPlan Word Processing
- FilePlan Data Management
- ProfitPlan "Gak" Spreadsheet
- MicroModeller Advanced Business Planner
- Transfer (transfers, macros, macros)
- Linkkey keyboard typing instruction program

I want to meet a Miracle

Name:

Address:

Telephone:

Postcode:

Company:

PORTICO TECHNOLOGY
South Bank House, Black Prince Road, London SE1. Telephone: 01-735 8171.

Introducing the new Videotype 1000:
Lexitron features.
Lexitron capability.
Lexitron quality.
Half the price.

For powerful backing
in finance and technology
A Raytheon Company



It costs less than \$70,000.
INCREDIBLE! You'll pay about the same for an ordinary word-processing system - or even a "dumb" unit, with no screen.

The new Videotype 1000 is a real Lexitron, with everything that makes Lexitron the leader in CRT text-processing: unique features that give you the ultimate in office efficiency and productivity.

Consider how much more you get with the new Videotype 1000.

Its microprocessor-controlled Theri means new capabilities can be programmed in any time. For "open end" expansion and easy, economical growth of the system.

Its compatibility with all other Lexitron Videotype models, and just as easy to operate. We'll teach any secretary how in less than a day.

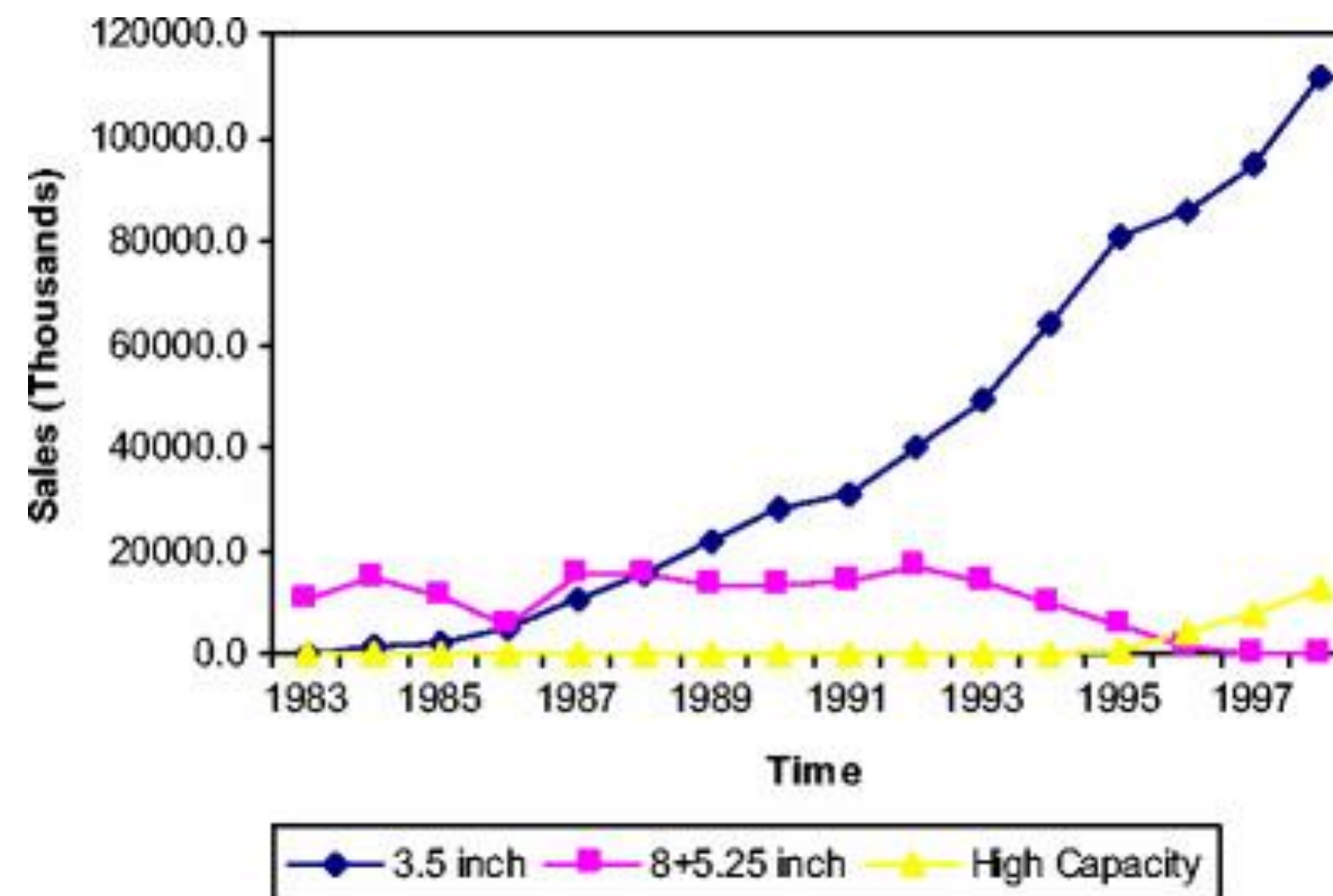
The performance is unbelievable, good, the price just plain unbelievable. See for yourself at the nearest Lexitron sales office or authorized dealer. Or write.

Lexitron
LEXITRON INTERNATIONAL
8800 De Soto Avenue, Chatsworth, CA 91311
Phone (714) 682-5541

Lexitron



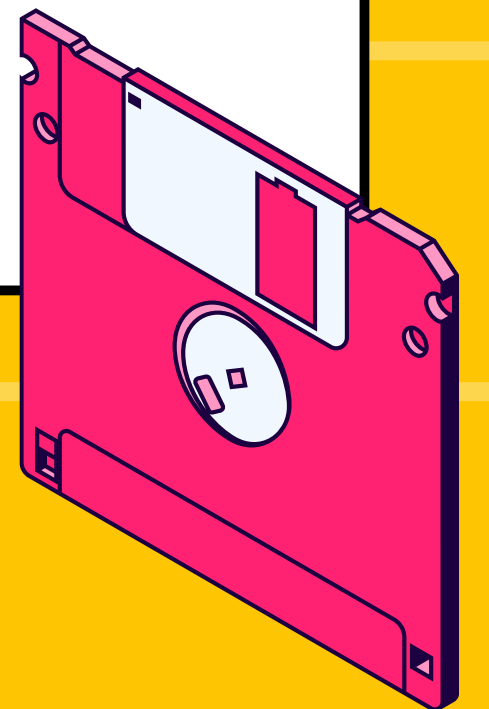
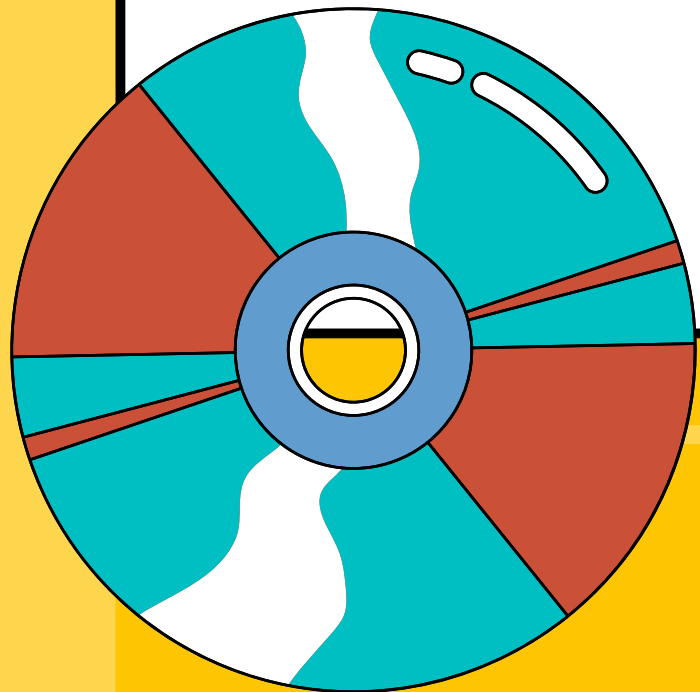
The 'digital wave'



To summarise

- **It is not as easy as copying over files**
- **Many elements make this work complicated that are not only technical**
- **Systems are not going to get easier over time**

**Today's technology is
tomorrow's legacy system**

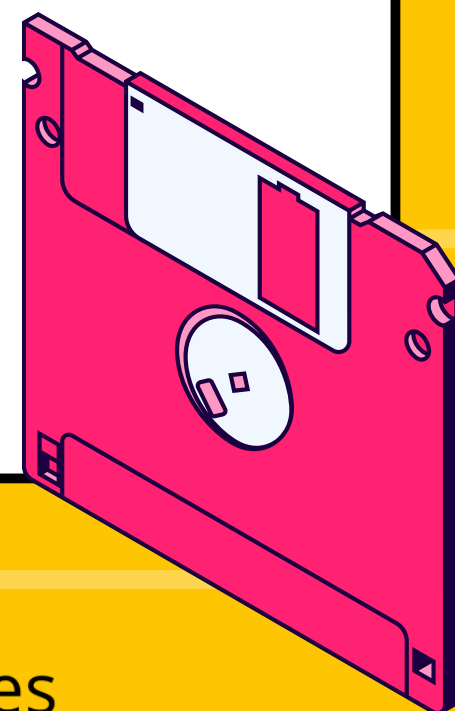
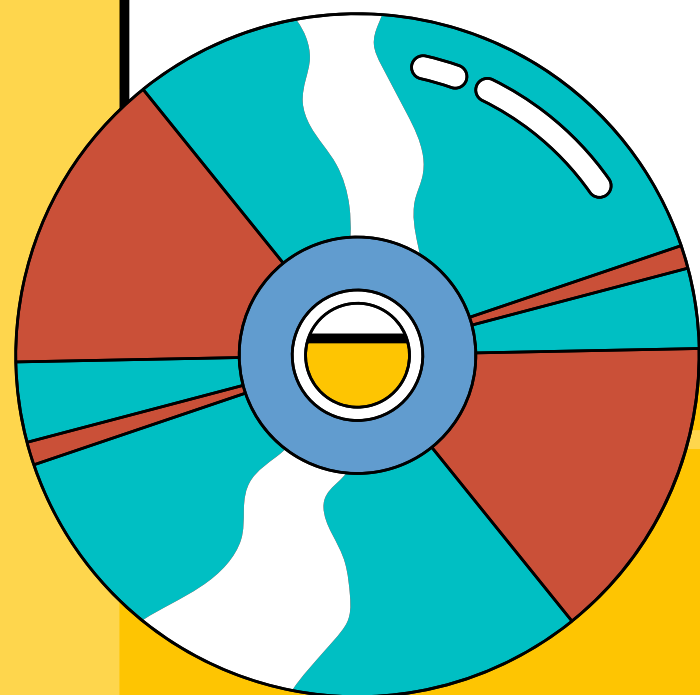




Thank you!

Email: lkt39@cam.ac.uk

<https://digitalpreservation-blog.lib.cam.ac.uk/>



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