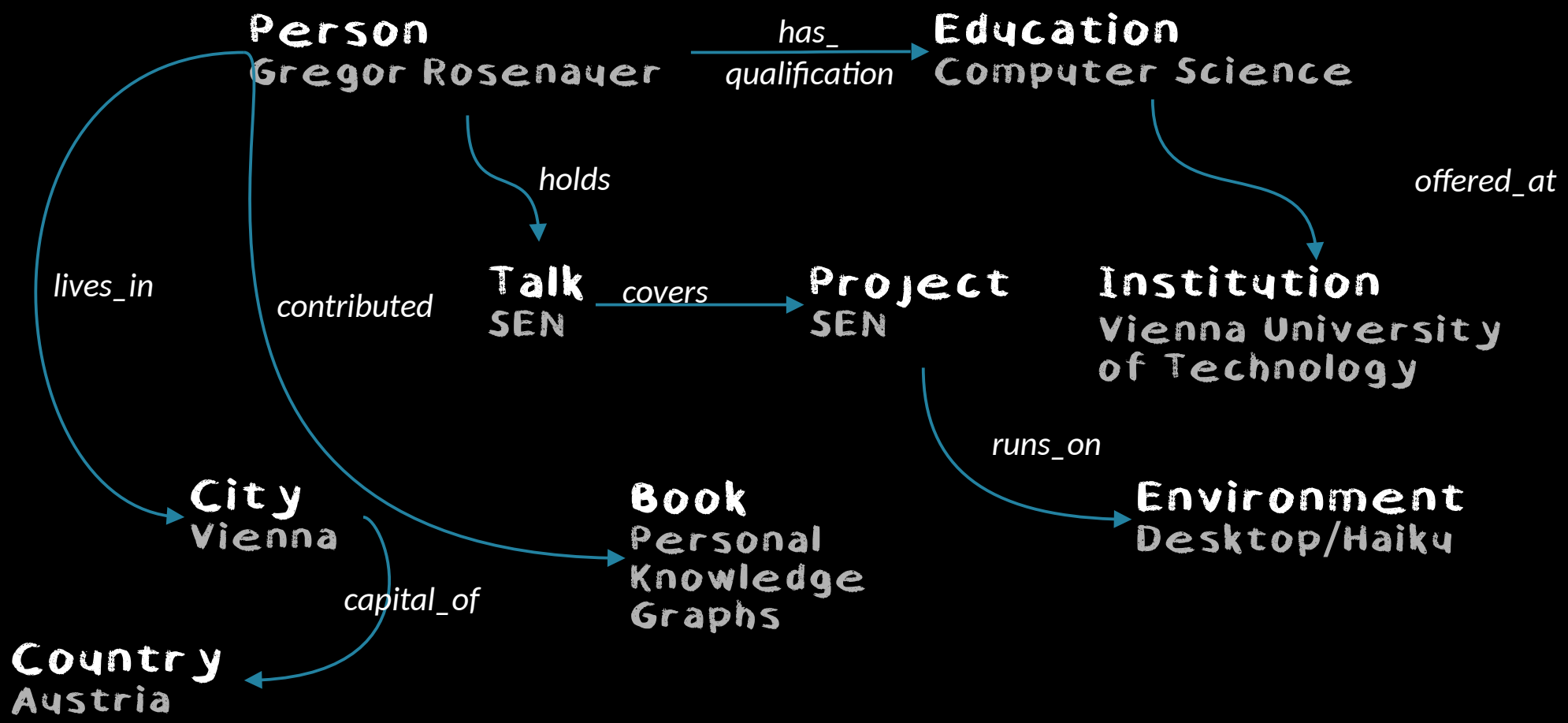
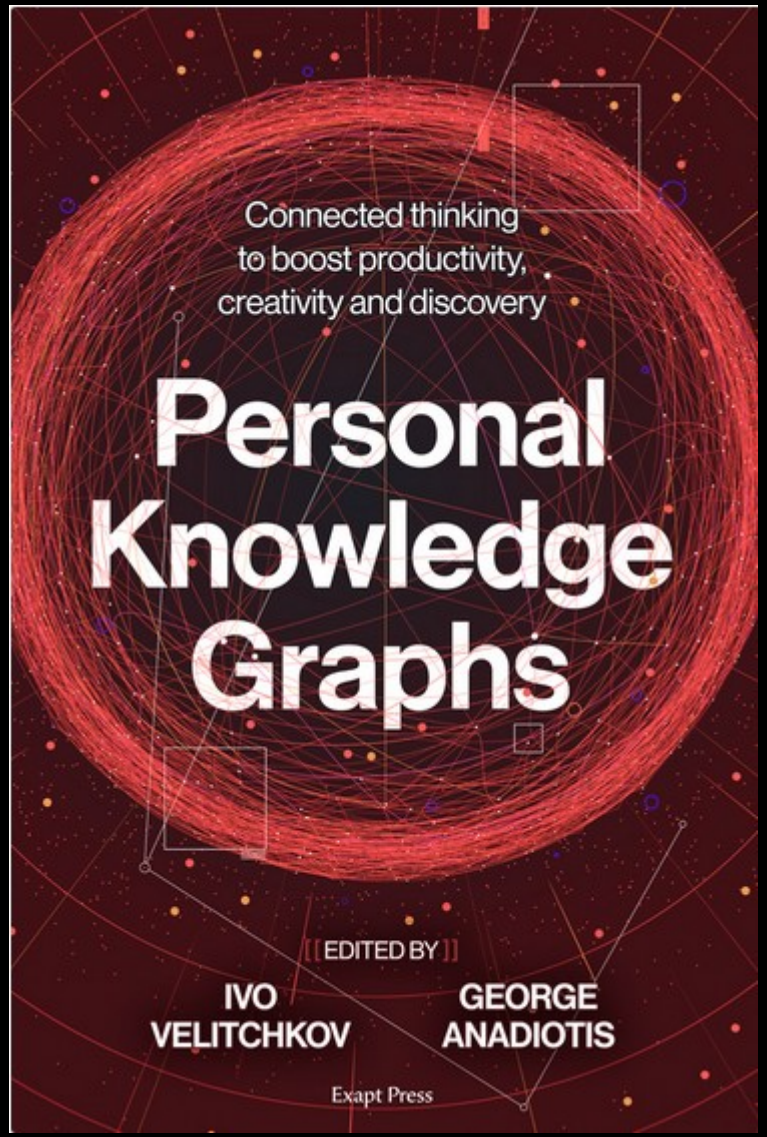
SEN

a /home for your thoughts

An introduction by Gregor B. Rosenauer

About


Person
Gregor Rosenauer
has_
qualification
Education
Computer Science
holds
offered_at
lives_in
contributed
Talk
SEN
covers
Project
SEN
Institution
Vienna University
of Technology
runs_on
City
Vienna
Book
Personal
Knowledge
Graphs
Environment
Desktop/Haiku
capital_of
Country
Austria



About

* contributed chapter on SEN:

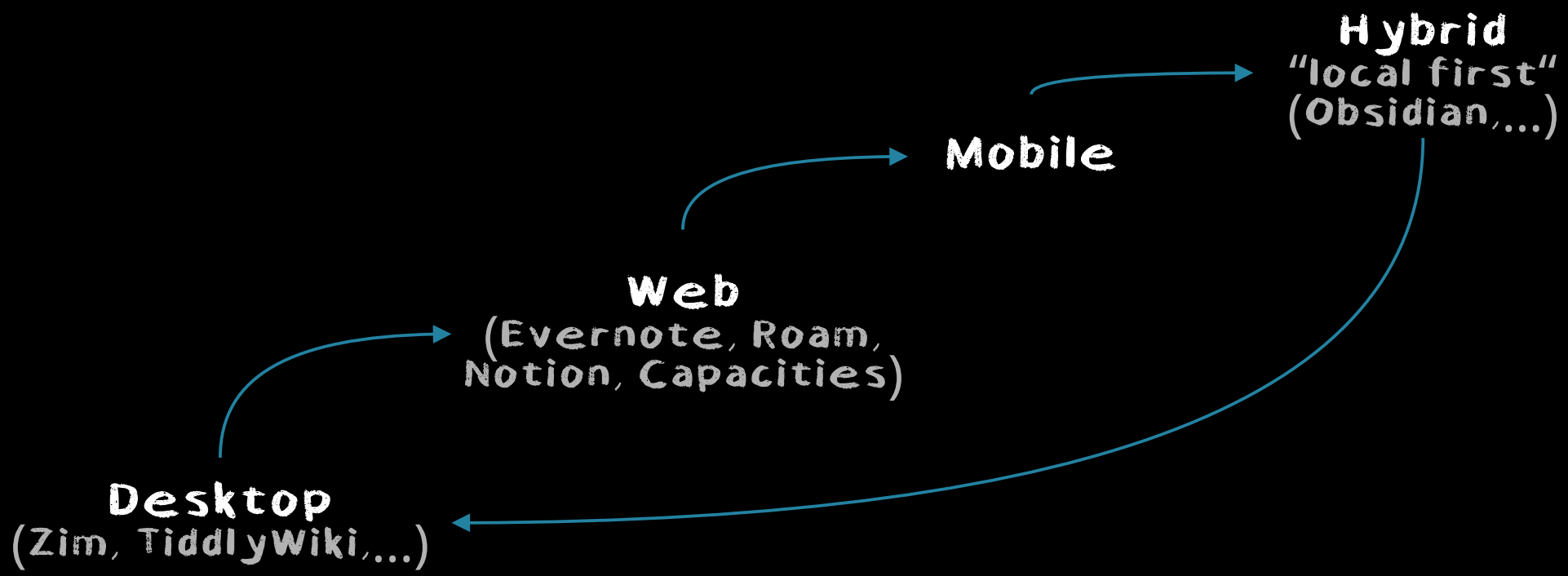
Extending the Desktop into a Personal Knowledge Graph with SEN

* introduction and technical overview
* prototype in development
* concept proven

SEN – The Vision

* not another tool but an infrastructure!
  because there are enough tools already
* best tool is no tool – 2x media break (tool, format)
  nothing between you and your knowledge
* PKM Limbo: how low can you go?
  from the cloud to the filesystem
* create an information environment, PKM as a use case
  what's the best foundation?

Landscape / Journey
(by environment)



Landscape / Journey
(by type)

Canvas
JSON Canvas

Blocks
composition

Types
(Anytype, Capacities, Tana)

Documents
documents with images and format

Text
simple text notes

Complexity

Observations - Issues

* rich formatting, poor semantics
  (no object types), no relation properties, metadata?
* dependencies on provider, tool, plugin or format
  notes in DB, cloud services, loss on export/import
* recently somehow being addressed, but not holistically
  types and relations are not available w/o tool,
* existing information not integrated
  needs to be continuously fed into the PKM tool

Couldn’t load file

Even though this file is available offline, you need an internet connection to play this MP3 video on iOS. Try again when you're back online.

Try again

Share

Observations - Trends

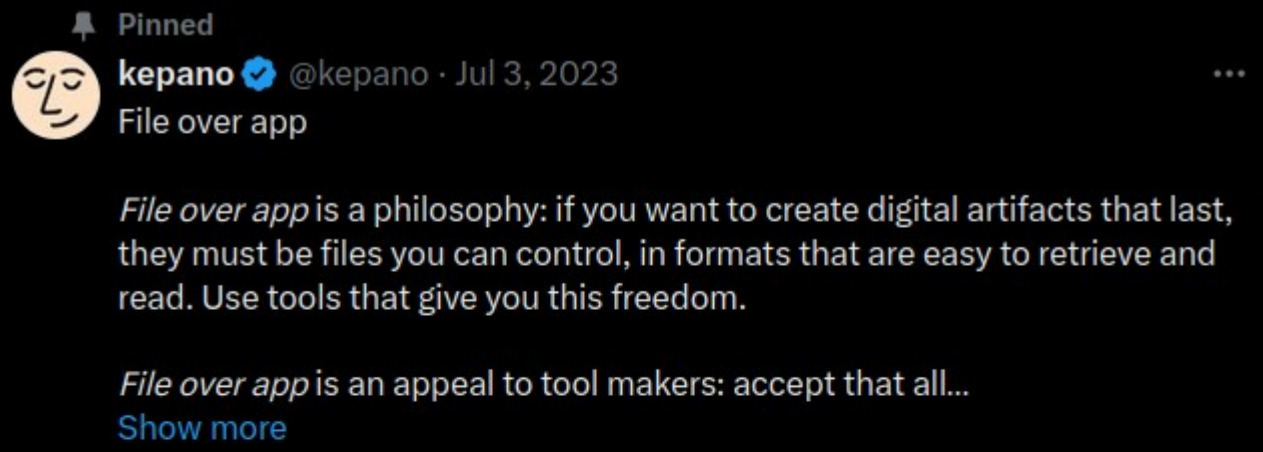
* use the power of types
    - object semantics, not just (linked) text notes
    - e.g. Tana, AnyType, Capacities (predefined)
* going local-first
    - reduce dependency on network or cloud provider
    - e.g. Obsidian (-Sync)
* still requires special formats, APIs and tools
    - e.g., not navigable w/o tool, even with open formats

Proposed Solution

* provide a desktop knowledge infrastructure
  - aka Semantic Desktop 2.0 w/o semantic web bloat
* adopt and extend existing tools and metaphors
  - familiar semantics available with everyday interface
* seamlessly integrate existing tools and documents
  - no need to reinvent the wheel or import your stuff
* uses OS provided mechanisms and interfaces
  - scripting, file types, file browser, file handling

File over App

* consensus: file-based
* maps well to atomic notes, Zettelkasten



POFF!

Plain
Old
Files and
Folders

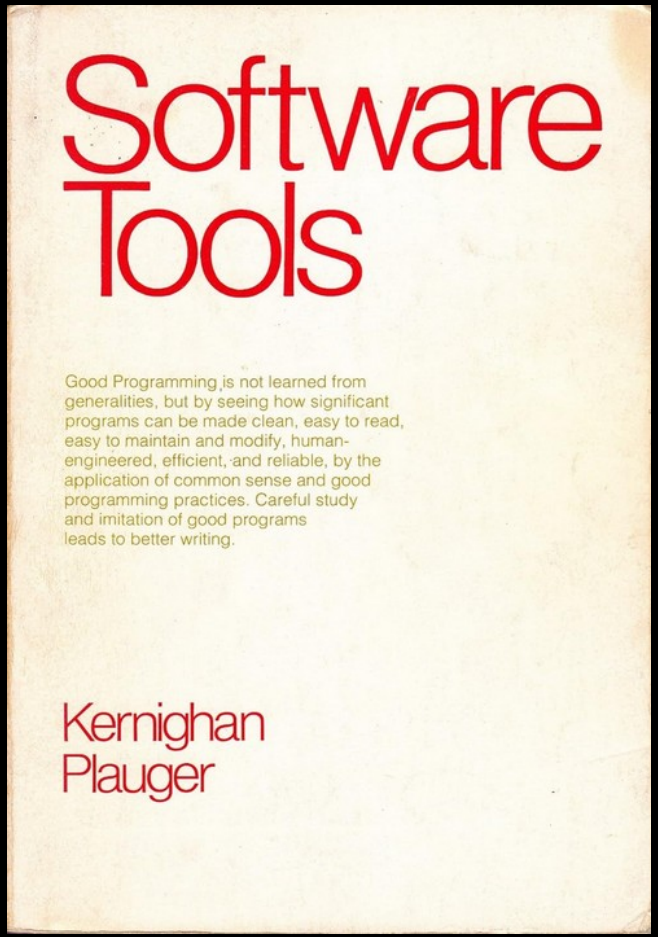
Problem with Files and Folders

* does not scale
    - messy, hard to search, overlaps and duplicates
* strict parent-child (even “contains”) relation
    - does not map well to actual usage patterns
* files enclose content, hide information
    - metadata not searchable or handled separately (index)
* apps own data, needed to access information
    - even with open formats – depend on tools for PKM?

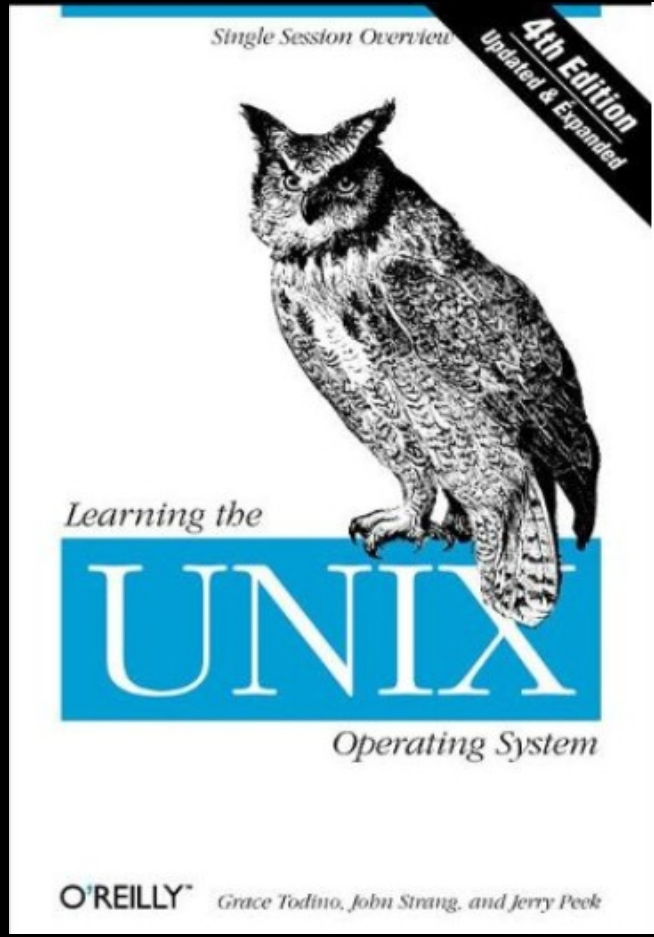
Proposed Solution cont'd
Data Centricity

* information is set free
    - information is shared, not owned by any single app
    - metadata exposed
* simple, readable, text based (simple types)
    - can be inspected without apps
* apps as Visitors
    - apps for advanced data handling
* http://datacentricmanifesto.org/

Learning from UNIX



* single purpose tools
* connected over pipes
* streaming processing
* solves complexity
* loose coupling
* very flexible
* tool independent
* data is free



SEN – The Mission

* combine the best of both worlds:
  native types + local-first + files&folders (with a twist;)
* basic knowledge management without custom tools
  search, manipulate and navigate metadata+relations
* integrate into familiar desktop environment
  intuitive handling without learning a new tool
* extensible and open to other use cases
  extract metadata, relations, retrieve info, integrate AI

Remaining challenges

* how to solve issues with files&folders?
* flexible access to *custom* metadata?
* visualisation (file browser, relations, types, metadata)
* search (consistent, system wide)
* configuration (for average users)
* integration with desktop apps (deep links?)

no OS/env currently supports this!

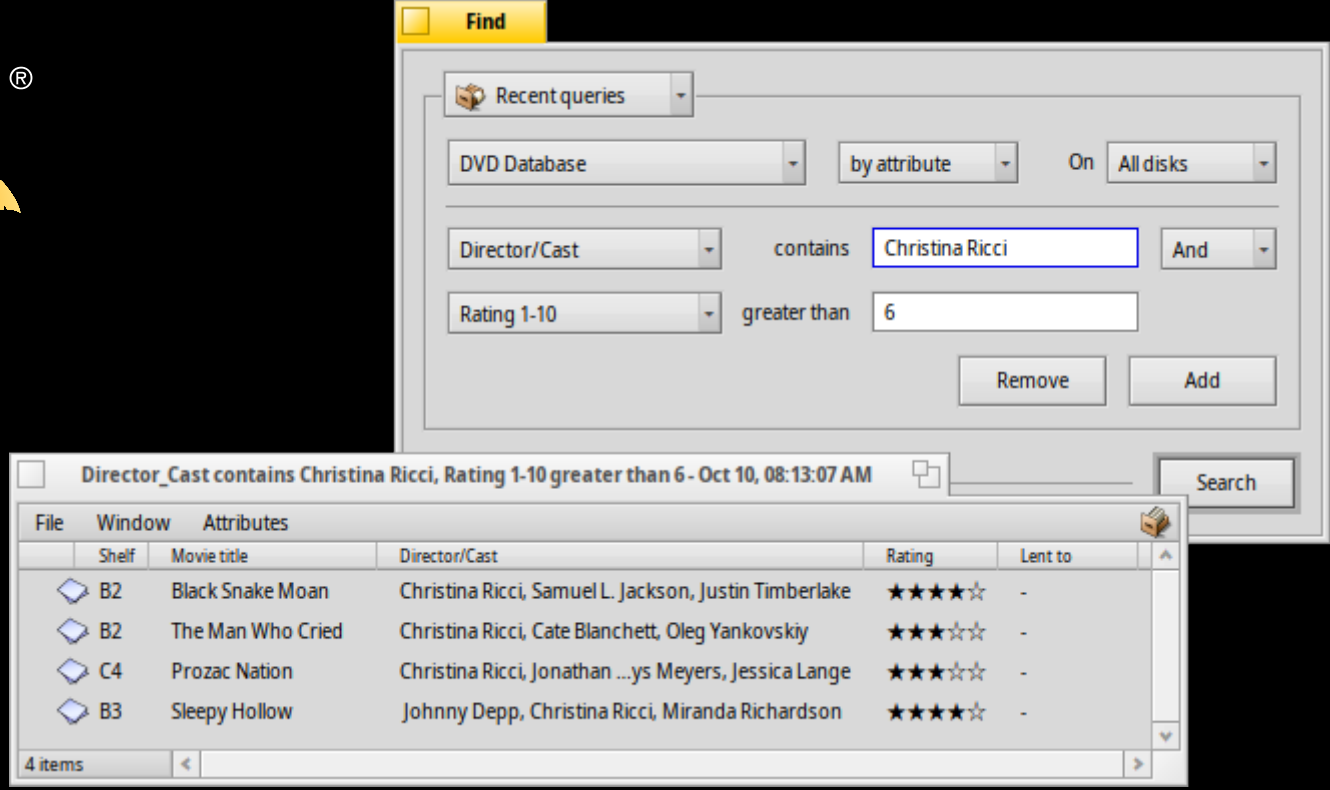
“The farther back you can look,
the farther forward you are likely to see.”

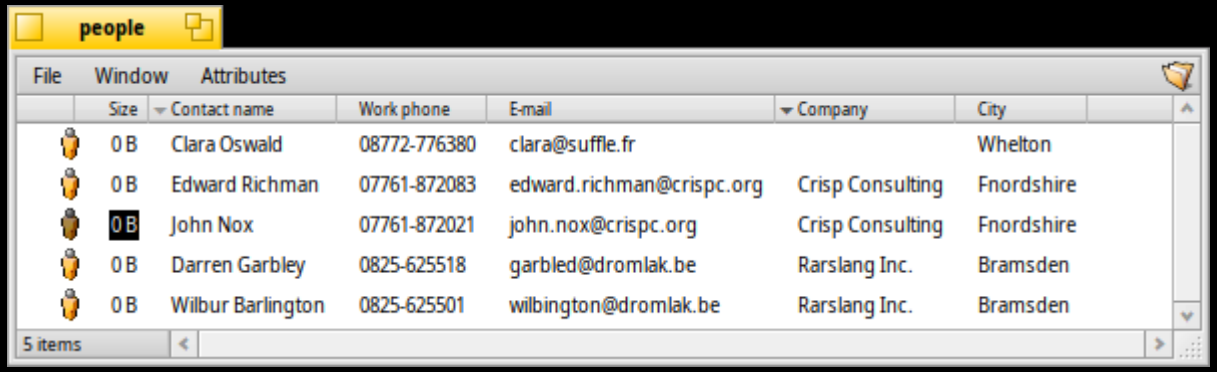
— Winston Churchill

* first *data-centric* OS
* performant (even on 1997 hardware)
* innovative filesystem
* native custom metadata and queries
* full support in UX (Tracker)
* excellent API (message-based)
* to good to die, today: Haiku

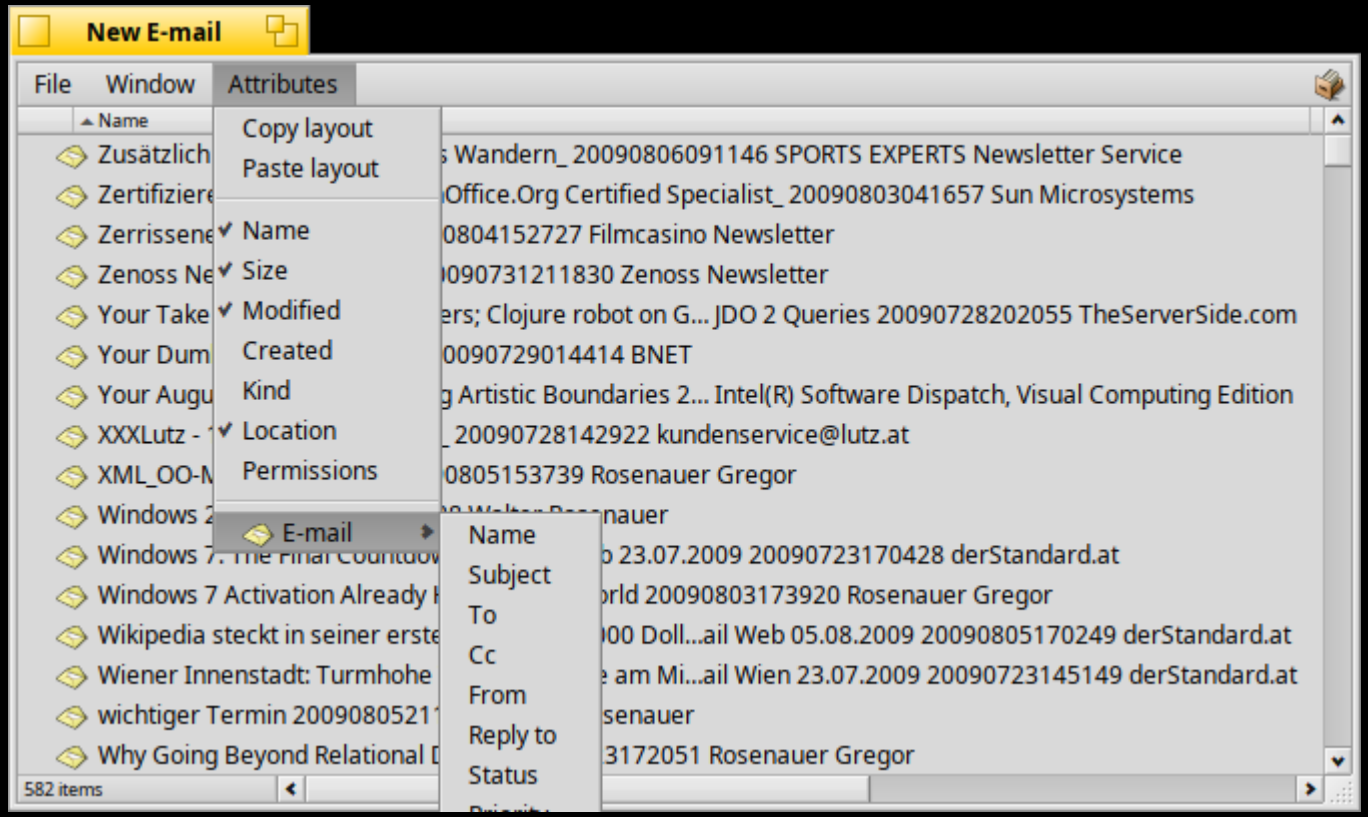
HAIKU®

https://www.haiku-os.org/





Itemized/Entity-first Environment



To the Crazy Ones

* I am not alone
* check out DXOS, GraphOS
* building connected entity-based environments (not OS)
* still a lot of effort
* research / high-level
* new UX and paradigms

Why Haiku?

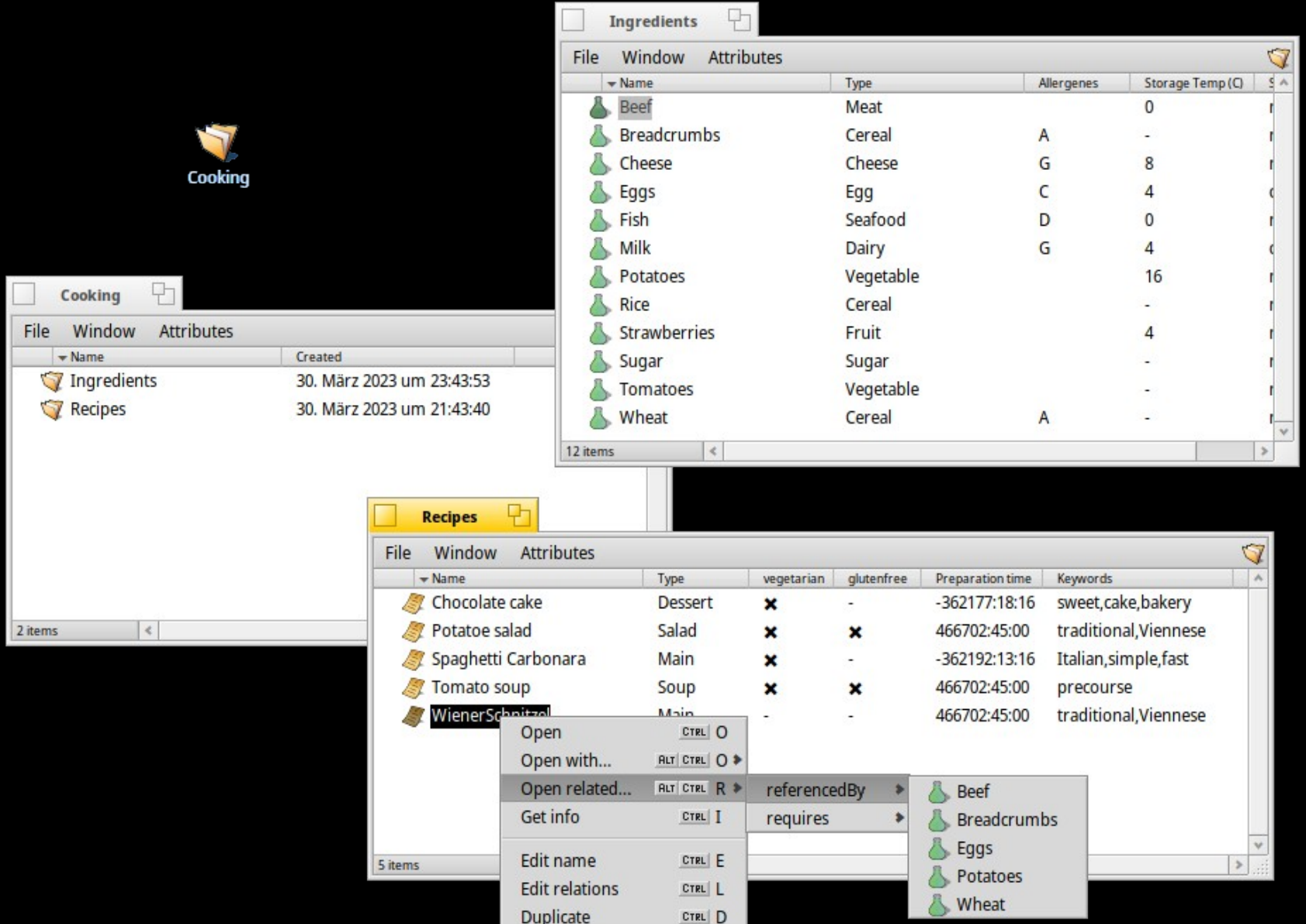
* it checks all the boxes (except relations)
* Haiku is an open source reimplementation of BeOS
  but with a modern twist (look, pkgman, Qt, tools)
* small but strong community (+Google SoC projects!)
* already usable for PKM work, almost as daily driver
* I wanted to build this already in BeOS times in 2003
* user-centric, common UX, very responsive
  with some unique features (translators, filesystem)

A sneak peak at SEN

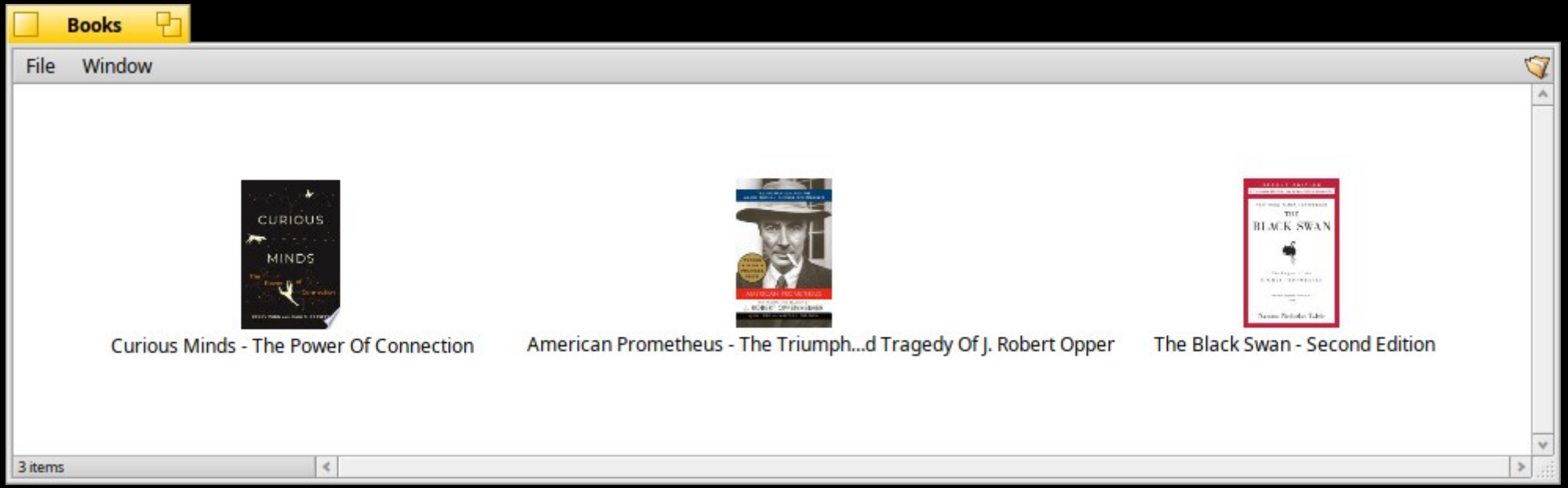
* files&folders + Context
* Entities (as Filetypes)
* custom metadata (filesystem attributes)
* UX integration (file browser)
* integrates with system-wide search
* *new: relations!*
* *new: augmented navigation (Relations)*
* *app integration with deep linking*

Use case examples

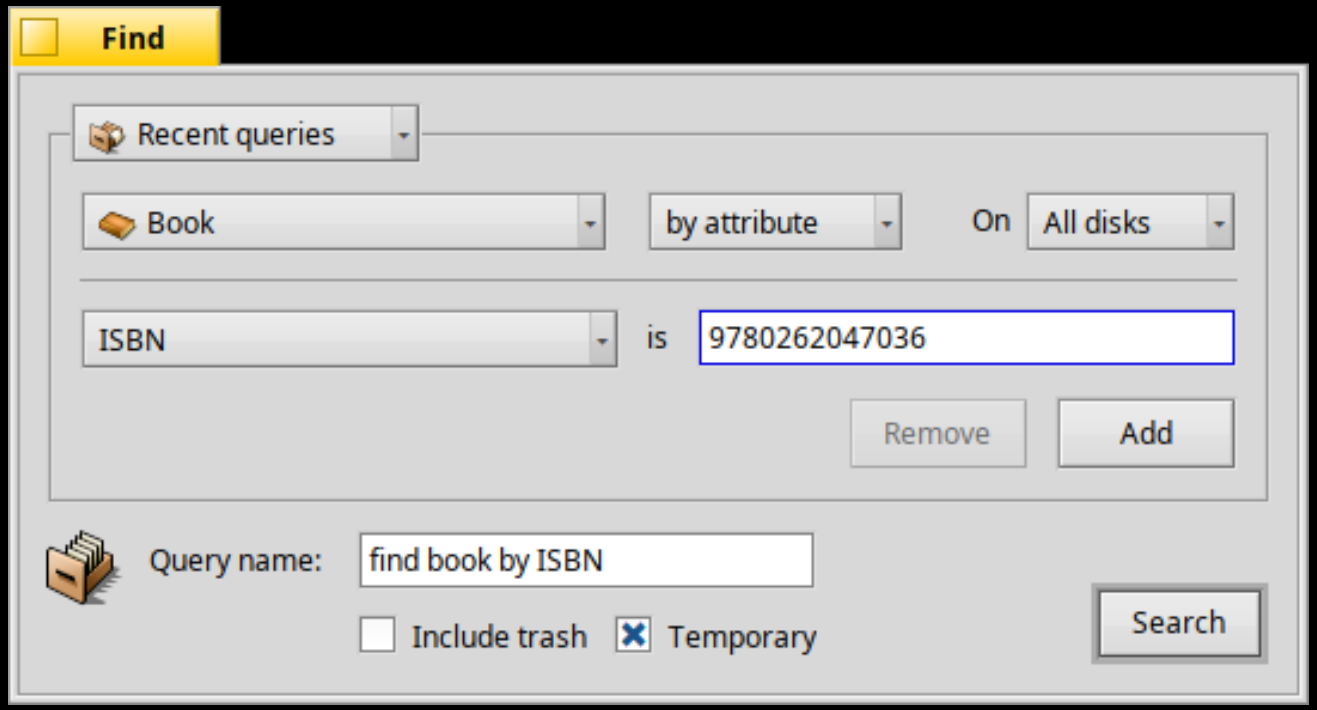
* recipes
* book quotes
* movie references
* *invent your own!*
* configuration
* usage
* *build ontologies based on use case*


Cooking
Ingredients
File Window Attributes
Name Type Allergenes Storage Temp (C)
Beef Meat 0
Breadcrumbs Cereal A -
Cheese Cheese G 8
Eggs Egg C 4
Fish Seafood D 0
Milk Dairy G 4
Potatoes Vegetable 16
Rice Cereal -
Strawberries Fruit 4
Sugar Sugar -
Tomatoes Vegetable -
Wheat Cereal A -
12 items
Cooking
File Window Attributes
Name Created
Ingredients 30. März 2023 um 23:43:53
Recipes 30. März 2023 um 21:43:40
2 items
Recipes
File Window Attributes
Name Type vegetarian glutenfree Preparation time Keywords
Chocolate cake Dessert ✖ - -362177:18:16 sweet,cake,bakery
Potatoe salad Salad ✖ ✖ 466702:45:00 traditional,Viennese
Spaghetti Carbonara Main ✖ - -362192:13:16 Italian,simple,fast
Tomato soup Soup ✖ ✖ 466702:45:00 precourse
WienerSchnitzel - - 466702:45:00 traditional,Viennese
5 items
Open CTRL O
Open with... ALT CTRL O
Open related... ALT CTRL R
Get info CTRL I
Edit name CTRL E
Edit relations CTRL L
Duplicate CTRL D
referencedBy
requires
Beef
Breadcrumbs
Eggs
Potatoes
Wheat

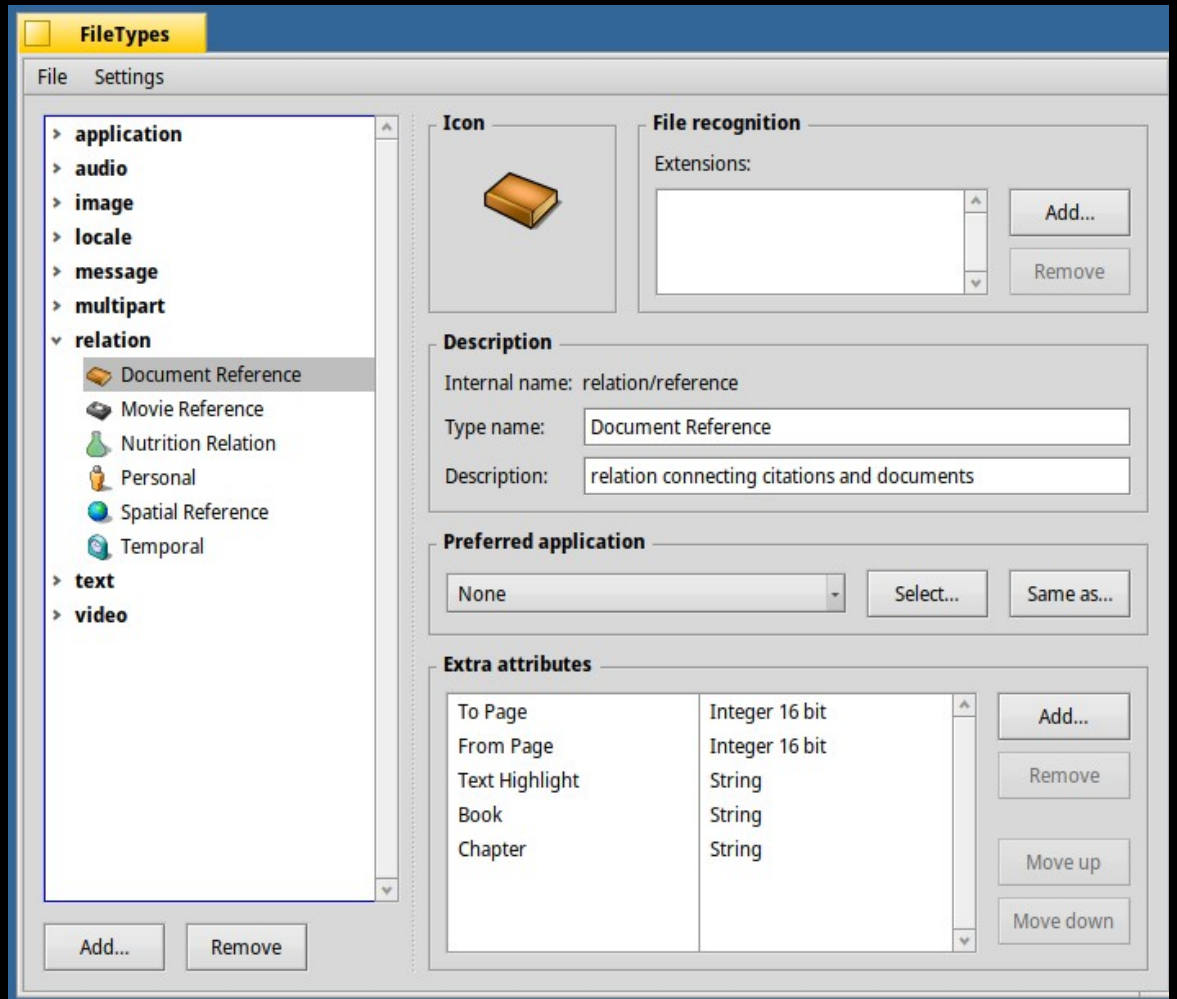
Books (beat Tsundoku)



Books (Search)



Relation Configuration



Relation View

Book Notes

File Window Attributes

Name	Start ...	End ...	Start Text	End Text	Source	Description
importance of solutide	23	23	from here	to there	a friend	interesting find by Eddy
philosophy of walking	120	121	a walk	in the park	self	about taking long walks

2 items

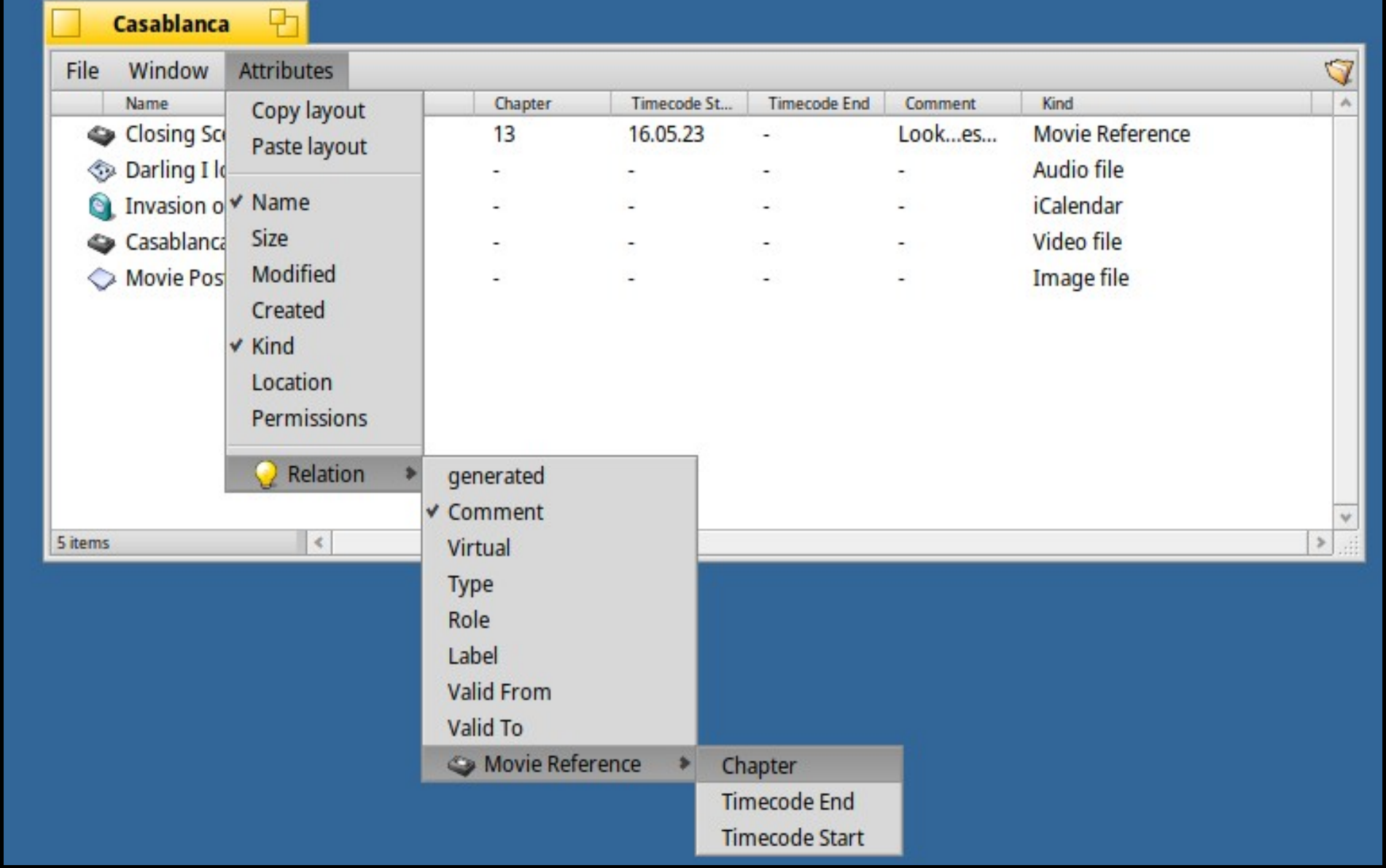
Example – Movie Notes

Casablanca

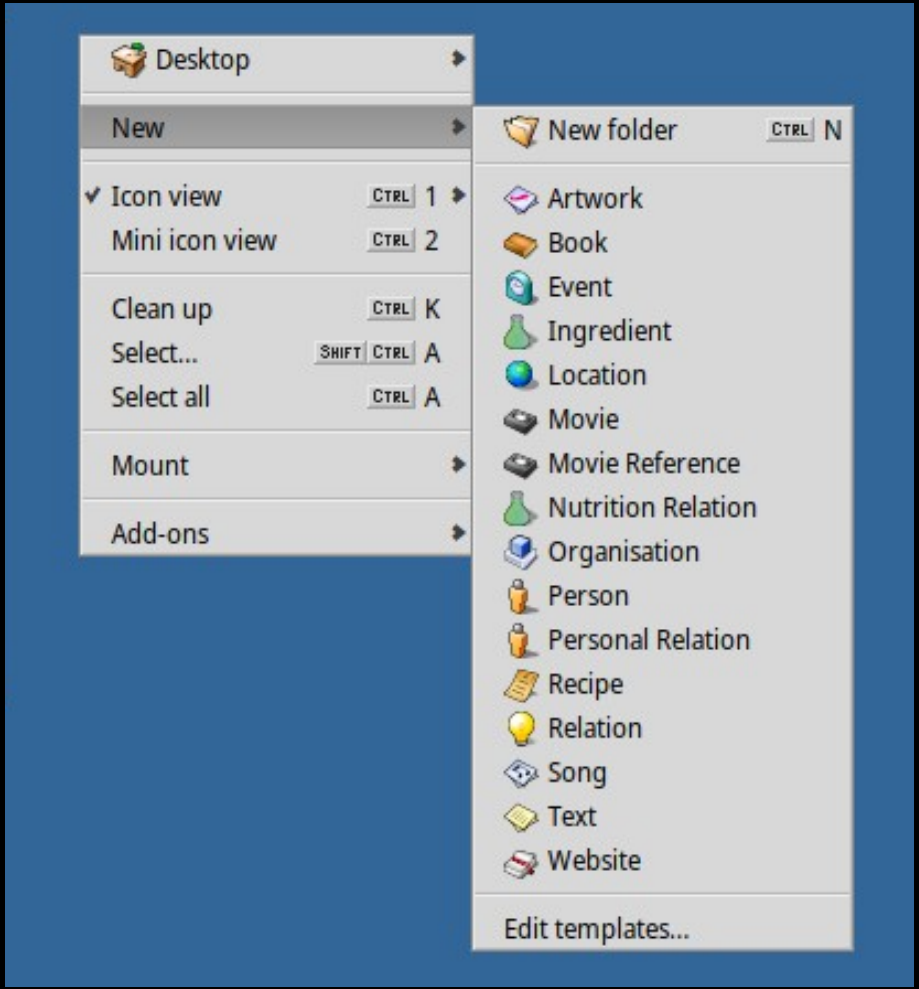
File Window Attributes

Name	Timecode Start	Timecode End	Comment	Kind	Chapter
Closing Scene	16.05.23	-	Look into my eyes...	relation/movie-reference	13
Darling I love you	-	-	-	Audio file	-
Invasion of Casablanca	-	-	-	iCalendar	-
Casablanca the Movie	-	-	-	Video file	-
Movie Poster	-	-	-	Image file	-

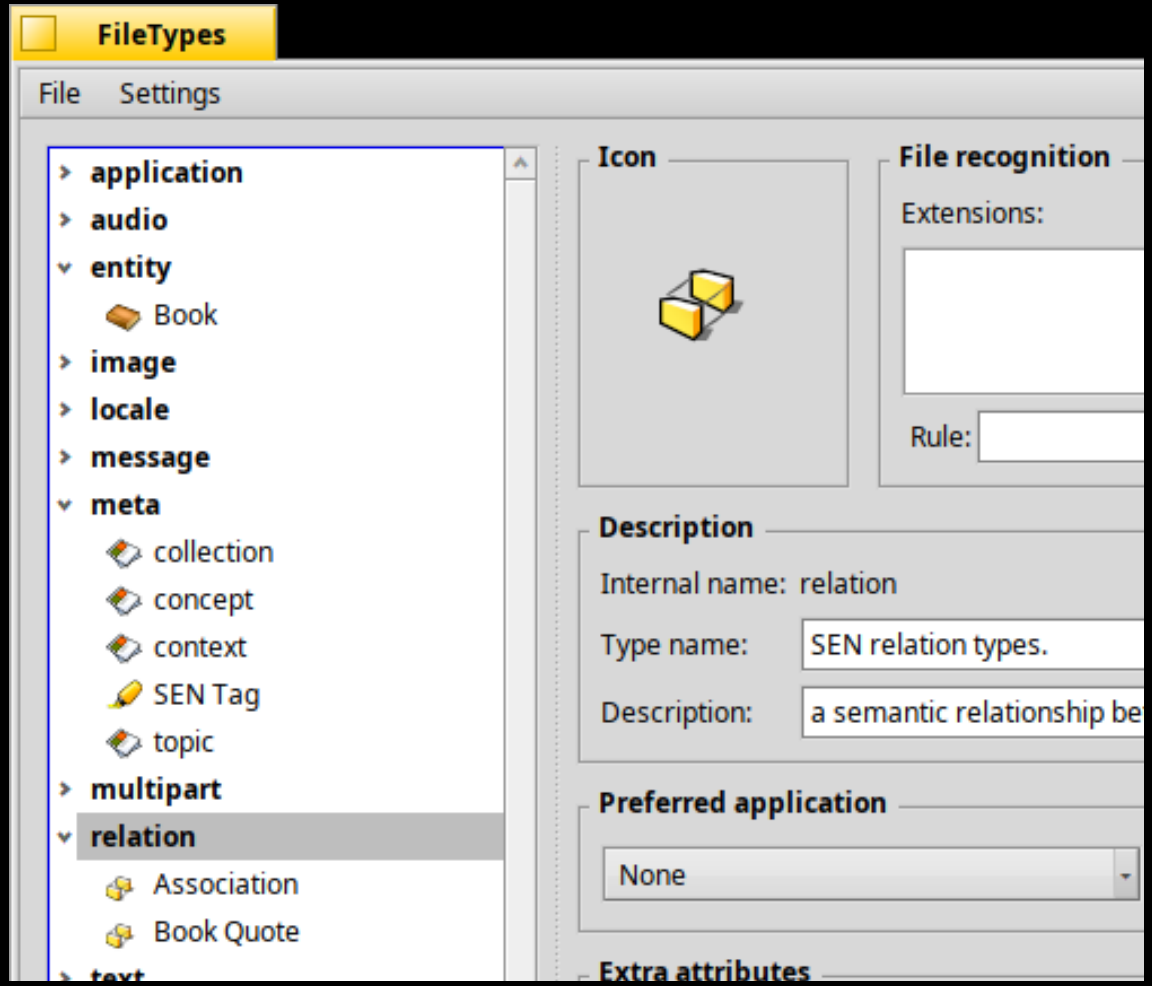
5 items


Casablanca
File
Window
Attributes
Name
Chapter
Timecode St...
Timecode End
Comment
Kind
Closing Sc
13
16.05.23
-
Look...es...
Movie Reference
Darling I l
Audio file
Invasion o
iCalendar
Casablanca
Video file
Movie Pos
Image file
Copy layout
Paste layout
Name
Size
Modified
Created
Kind
Location
Permissions
Relation
generated
Comment
Virtual
Type
Role
Label
Valid From
Valid To
Movie Reference
Chapter
Timecode End
Timecode Start
5 items

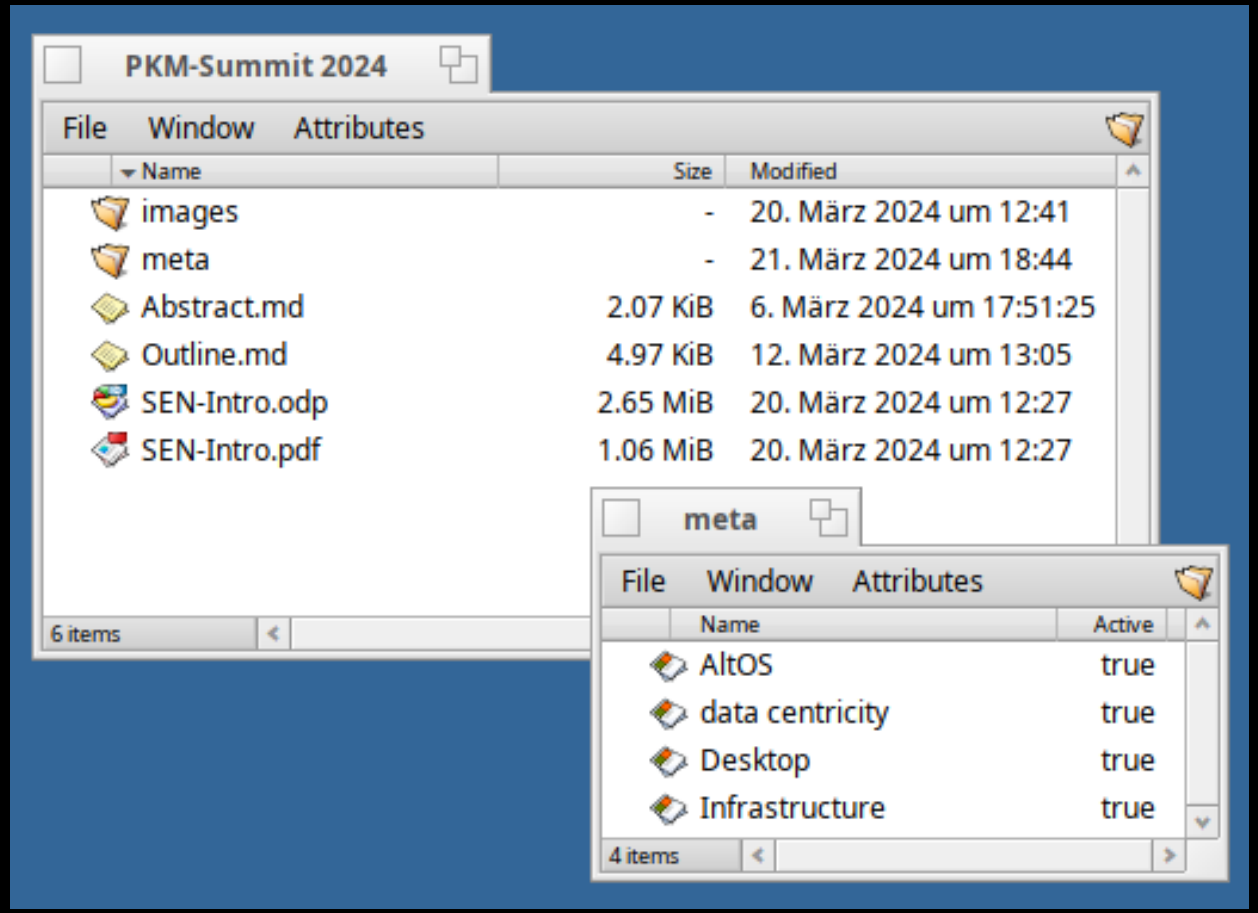
Create a new Node



Meta Types Configuration



Meta types Usage



To be continued...

* new core implementation based on latest findings
* use cases: scripting and integration
* deep linking for documents and movies
* ontologies (ongoing)
* demo image
* regular progress updates
* secure some *funding*...

Reach out...

* info@sen-labs.org
* @labs_sen
* https://senlabs.substack.com
* here at PKM Summit 2024!
* soon: https://www.sen-labs.org