MAY 1 1997 ∅

OSMIC WORKSHOP #3.

Ted Nelson
Andrew Pam
Yokihiko Yoshida
Shu Nakamae
Ken'ichi
Kei Kawai

I've rearranged the pages,
and added comments using this pen.

CONTENTS

more addresses.

yukihiko@sfc.keio.ac.jp
Yukihiko Yoshida.

prep.ai.mit.edu (gnu archives)
FREE SOFTWARE FOUNDATION
Richard Stallman

I. GENERAL REMARKS

PROJECTS THAT CAME FROM XANADU

X [NOT WWW.] (Tim only heard of Xanadu just before WWW was released)
Tim Berners-Lee
Marc Andreessen

LOTUS NOTES. DISTRIBUTION aspect of Xanadu.
Version control, limited links
Ray Ozzie

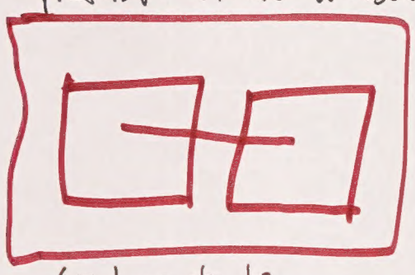
MICROcosm, Webcosm (multi-user on-line)
SEPARATE PACKAGE OF LINKS
Wendy Hall et al.
U. Southampton

HYPERWAVE (formerly Hyper-G)
LARGE-GRAIN transclusion
Invisible Links
Hermann Maurer et al.
Tech. U. of Graz, Austria

(Others at U. North Carolina, U. Texas, U. Padua (?))

OSMIC (freeware version) — What we're doing.

TRANSPOINTING WINDOWS



(I hope to be eventually called Nelson windows)

Current OSMIC project
~~this~~ is for

how? { TEXT
AUDIO SAMPLES

usf | LINKS
TRANSCLUSION

(later) { FAX
(adjusted data structure)

Fax stream

} addressable, line
at least by

Objective = fancy new functions
in AN OPEN SYSTEM
anybody can add to and use.

AN EASIER, FREE VERSION
OF LOTUS NOTES.

A STORAGE AND REVISION METHOD
WHICH PROJECTS TO HTML AS OUTPUT.

II

LINKS

OSMIC / XANADU LINKS

for

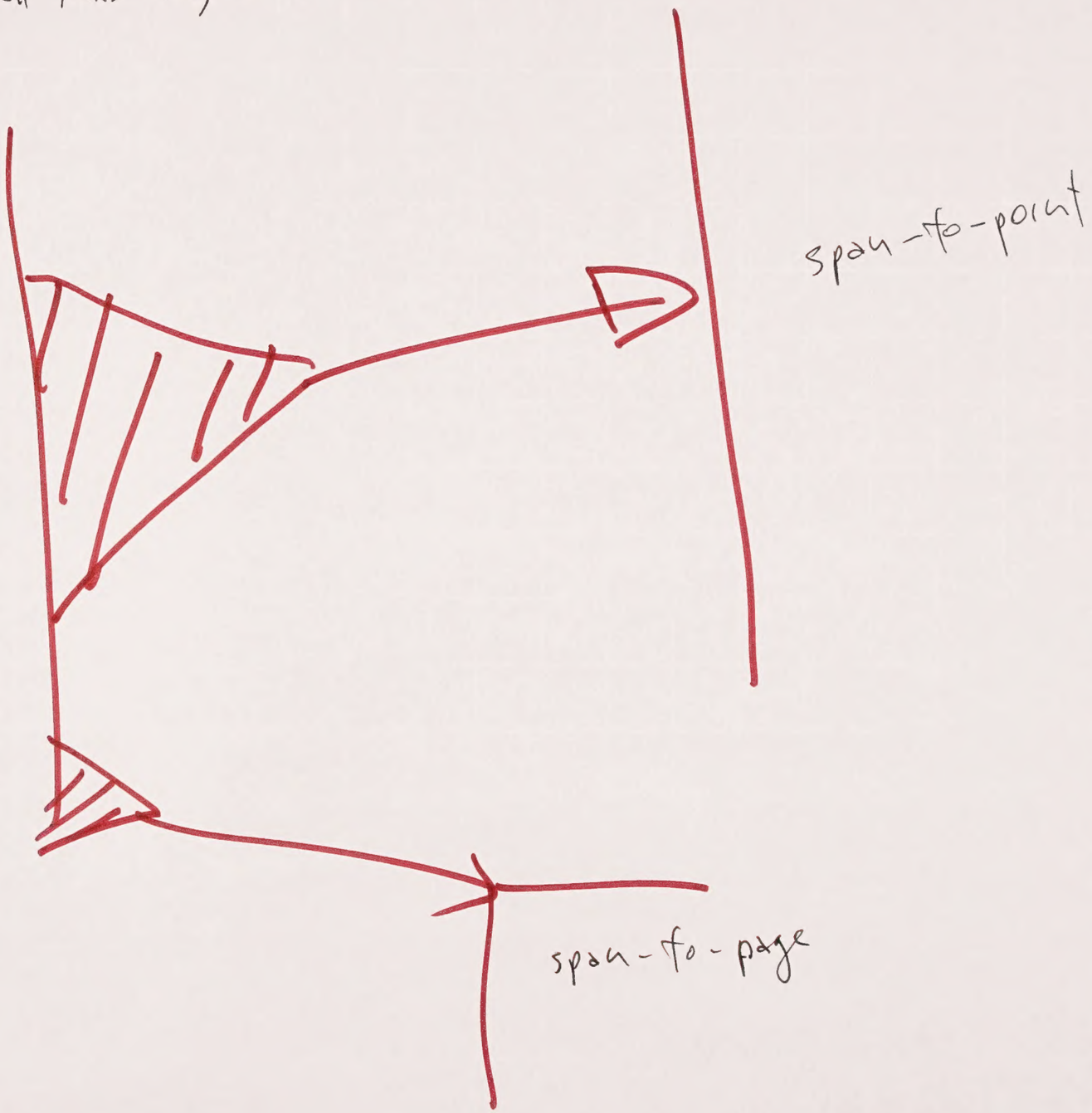
CONNECTIONS OF ANY KIND
PUBLISHED LINKS
TEMPORARY LINKS ("sticky notes")

~~MAY 1 1997~~

MAY 1 1997 6

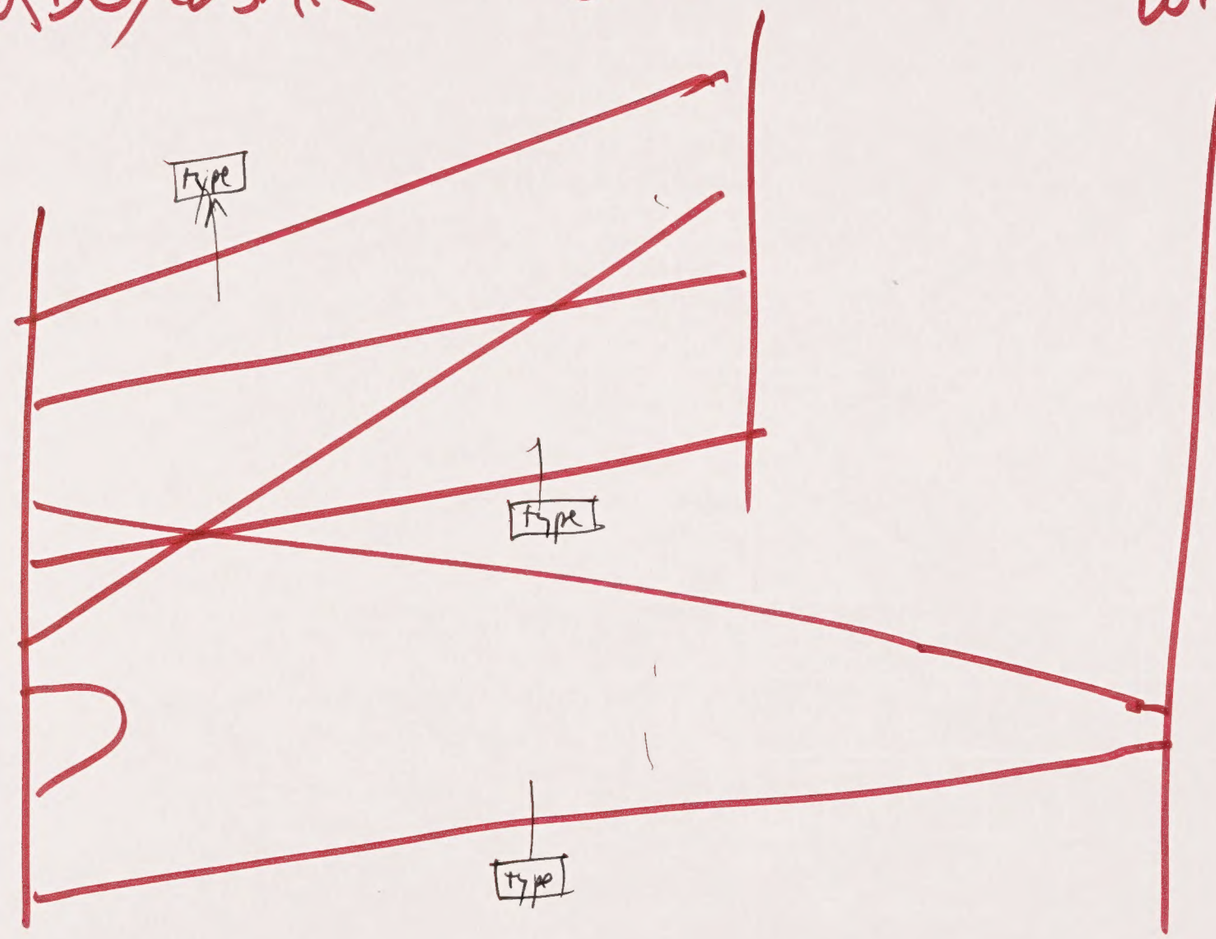
HTML link (trivial)

Only the original author's can be seen,
I.e., all links may be followed in only one direction.



XANADU/COSMIC : OVERLAPPING LINKS BY ANYBODY, WITH SAME PROPERTIES

— stored the same way, whether they're the author's original links or anybody else's.

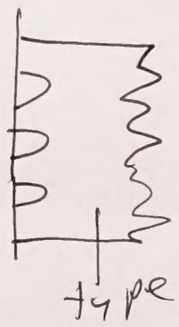


THE AUTHOR'S OFFICIAL LINKS are PART OF the original document, others are not —

BUT THEY'RE ALL HANDLED THE SAME WAY.

ALL LINKS MAY BE FOLLOWED IN EITHER DIRECTION BY ANYONE.

NOTE THAT A LINK MAY BE ONE-SIDED

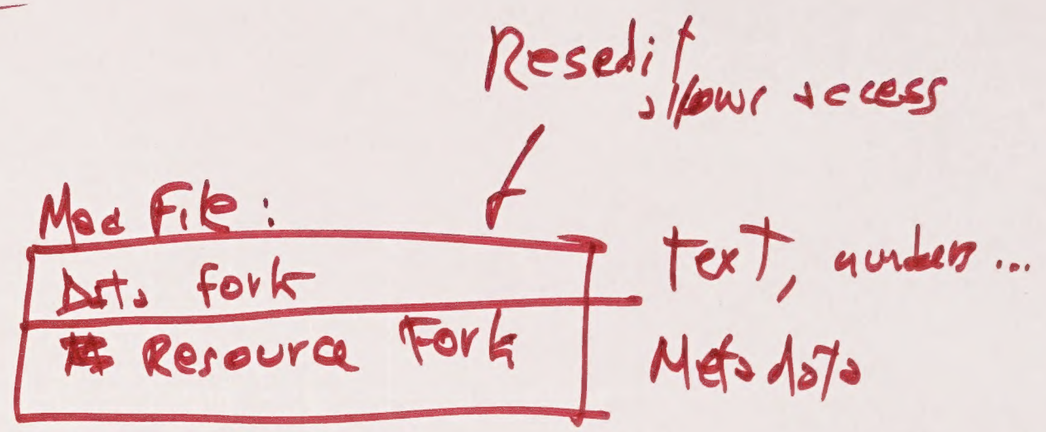


THIS IS HOW WE MARK THINGS AND SHOW DATA ABOUT THINGS. (Metadata, LABELS, etc.)

today's

METADATA systems

Apple 'Resource Fork'



OS/2 (similar)

HPFS — High-Performance File System

SGML "Standardized Generalized Markup Language"

From publishy ~1970. <tags>

↓

HTML (Officially an Instance of SGML)

PICS ~~PIX~~ file on Web (Platform for Internet Content Selection)

Censorship Ratings, Copyright, etc.

GENERALIZABLE

XANADU: VLINK — TYPED — ALLOWS DISAGREEMENT.

(Note That Links will come later in the project.)

III VERSIONS.

The operative unit is a VERSION.

(A "document" is some collection of versions which could be entirely different.

A "version" is an exact structure at some point in time (later, in hypertime).)

THE BASIC DATA STRUCTURES

FROZEN DATA ——————→ ... growing

Primedia (text, audio sampler...)

——————→ ....

Edit Ops ——|——|——|——|——→

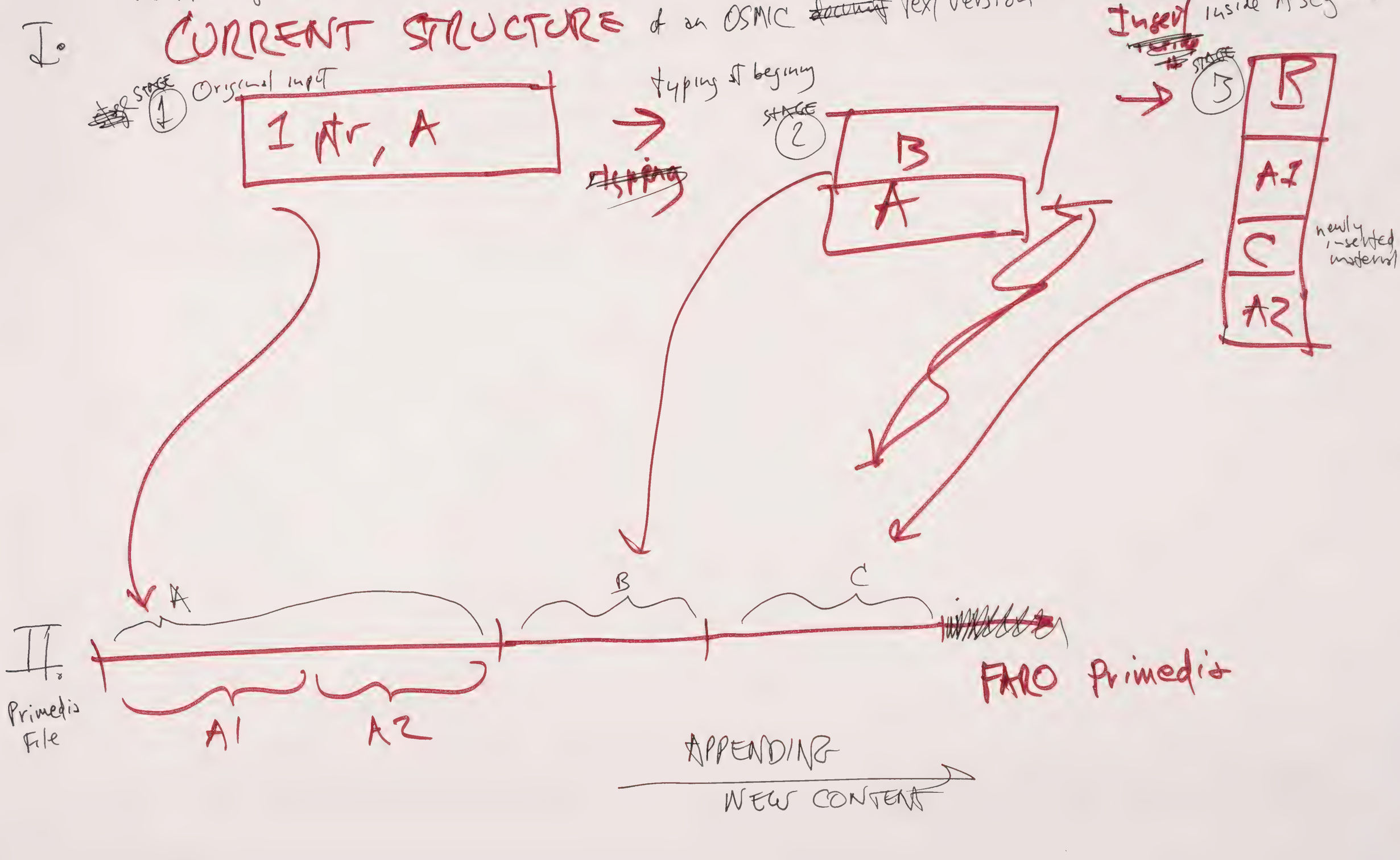
Long form: saves whole input

Short form:

VERSION (may save for convenience)

} List of pieces (sequential ~~file~~ document with links, like a Web page)

I. We follow stages of the CURRENT STRUCTURE of an OSMIC ~~document~~ text version =



~~DATA~~

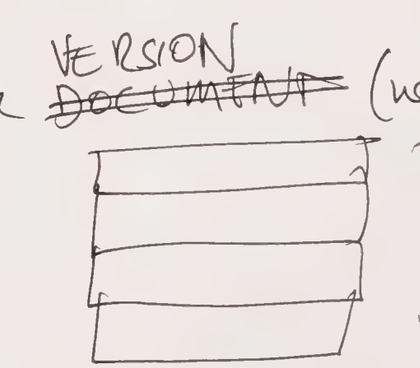
Primedia (text, ~~graphics~~ audio ... stream)

Frozen
Append-and Read Only (FARO

Edit operations → [Also Frozen Append-&-Read-Only files]

← → } can go backward & forward in list of operations

(Current structure) : VIRTUAL ~~DOCUMENT~~ VERSION (need not be saved)



Let's WHAT A VERSION IS UNDERNEATH

LOOK AT ~~POINTERS~~ (probably should be human-readable)

VIRTUAL DOCUMENT

title.version

DATA title.version.PIECES

osp< start - end >

ADDRESSES (unique machine ID) pathname or machine

start

byte offset

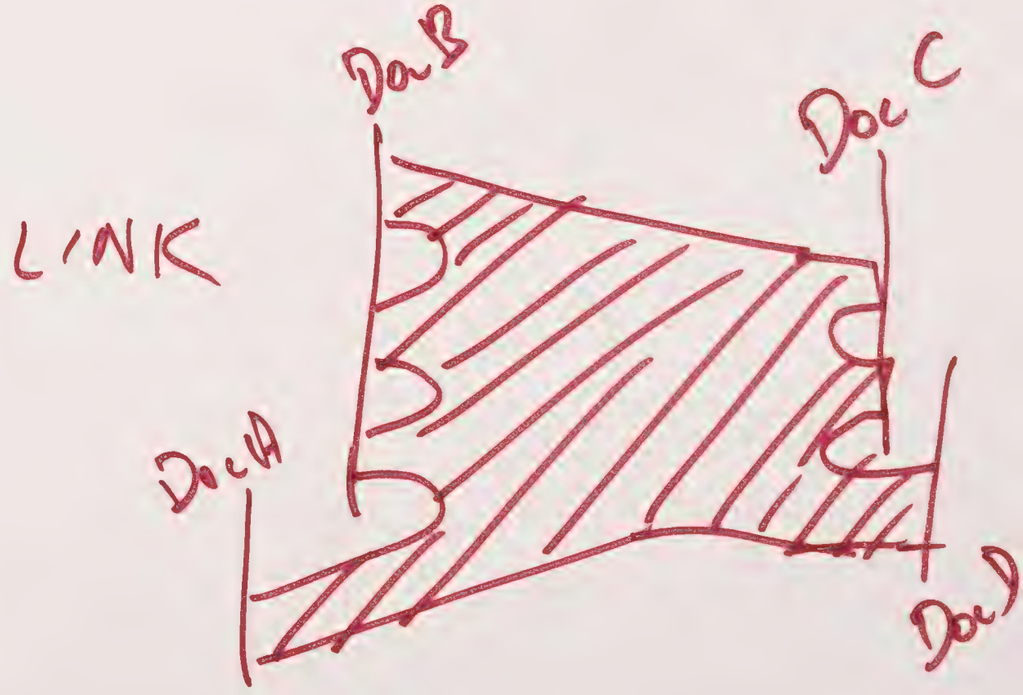
LINKS (metadata ...) title.version.LINKS

type: leftset: rightset:

osl, <s-e><s-e><s-e>

title.version.LINKS

LINK



IV EDITOR & ROUTINES.

HyperOps that user chooses

INSERT
REARRANGE
DELETE
MAKE LINK
DELETE LINK

EARLY

ROUTINE (underneath)

FROZEN

APPEND TO 1 FILE

CREATE POINTER (receiving data from some editor)

SPLIT POINTER editor says split this

LEVELS

EDITOR { OSMIC - UNAWARE (sends whole file)

OSMIC - AWARE EDITOR

OSMIC - COOPERATIVE EDITOR (mjlt hold pointers)

"save"

postprocessor finds changes by comparing with previous version

OSMIC

~~CHANGE LIST~~

DATA STRUCTURE ROUTINES

DATA STRUCTURE

① Primedia files (

② ~~Change~~ CHANGE LIST

~~CURRENT~~ ③ CURRENT VERSION LIST

So we should do some PRELIMINARY

CLUMSY EDITOR (IN EMACS ? PERL ?)

ROUTINES PRELIM. EDITOR DOES =

BREAK CURRENT POINTER (IF USED)

ACCEPTS NEW STRING

MAKE POINTER

TAKE STRING FROM KB

DELIVER STRING TO BACK END

VIEW IN PRELIMINARY

~~STUPID~~ EDITOR: YOU SEE THIS (exactly list of ~~ptr~~ pointers)

SHOW PTRS ON LEFT

ptr start end

ptr start end

SHOW STRING ON RIGHT

PRELIMINARY VERSION:

make new ptr
divide ptr
delete ptr
(rearrange ptrs, LATER)

BACK-END ROUTINE = APPEND TEXT

What terminates a change? (In some more conventional/ed.for or complete

WHEN USER MOVES ↑ CURSOR.
(Throws away most small corrections)

(Or, in our preliminary ed.for, somehow closes an input sequence.)

This is not a deep ~~~~ philosophical choice,
just the simplest way to handle it
within ~~~~ append-only philosophy.

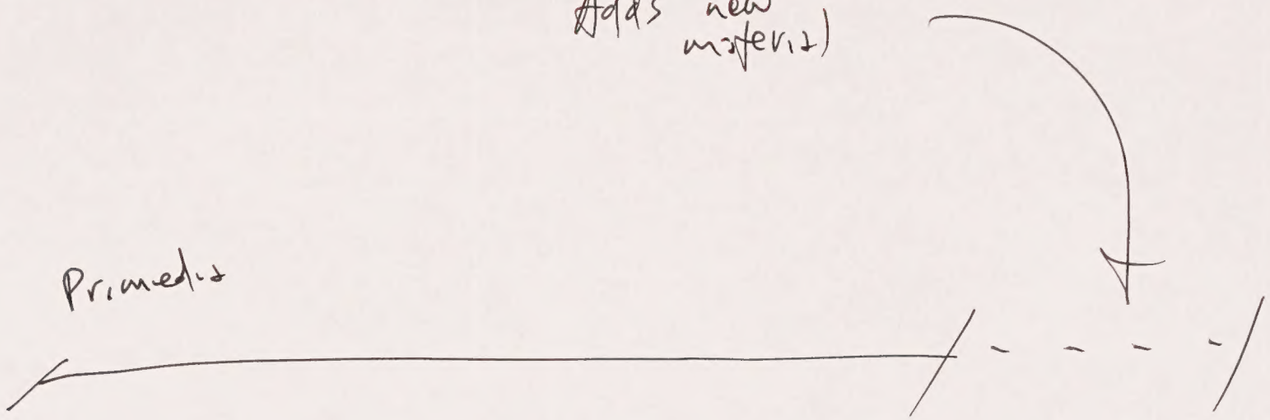
V

THE APPEND-ONLY ROUTINE, AND HOW TO PACKAGE IT.

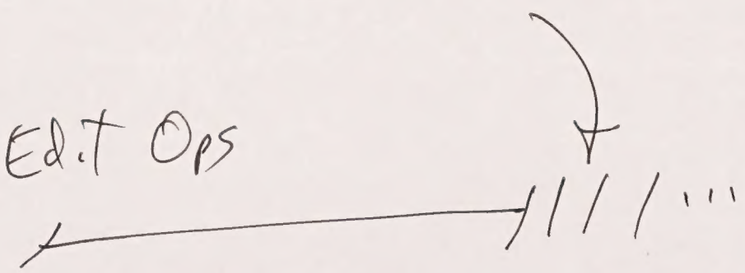
MAIN

DATA STORAGE ROUTINE (Frozen append-only and -read-)

Adds new material



User may choose to save
a number of different primedia streams:
"text I type in myself"
"emails in"
"audio from the Net"
etc.



for Frozen Append-and-Read-Only ~~files~~ filing,

MAY 1 1997 24

ANDREW SUGGESTS:

① CREATING ~~A~~ A VIRTUAL APPEND-ONLY FILE MACHINE

by DEFINING A 'CHARACTER DEVICE' which ONLY ALLOWS INPUT.

② A DEVICE THAT IS PIPED TO (pipes only append)

③ 'VIRTUAL FILE SYSTEM.' or 'LOOPBACK FILE SYSTEM.' Has file commands similar to conventional ones, converts these to conventional file commands and sends them to the kernel.

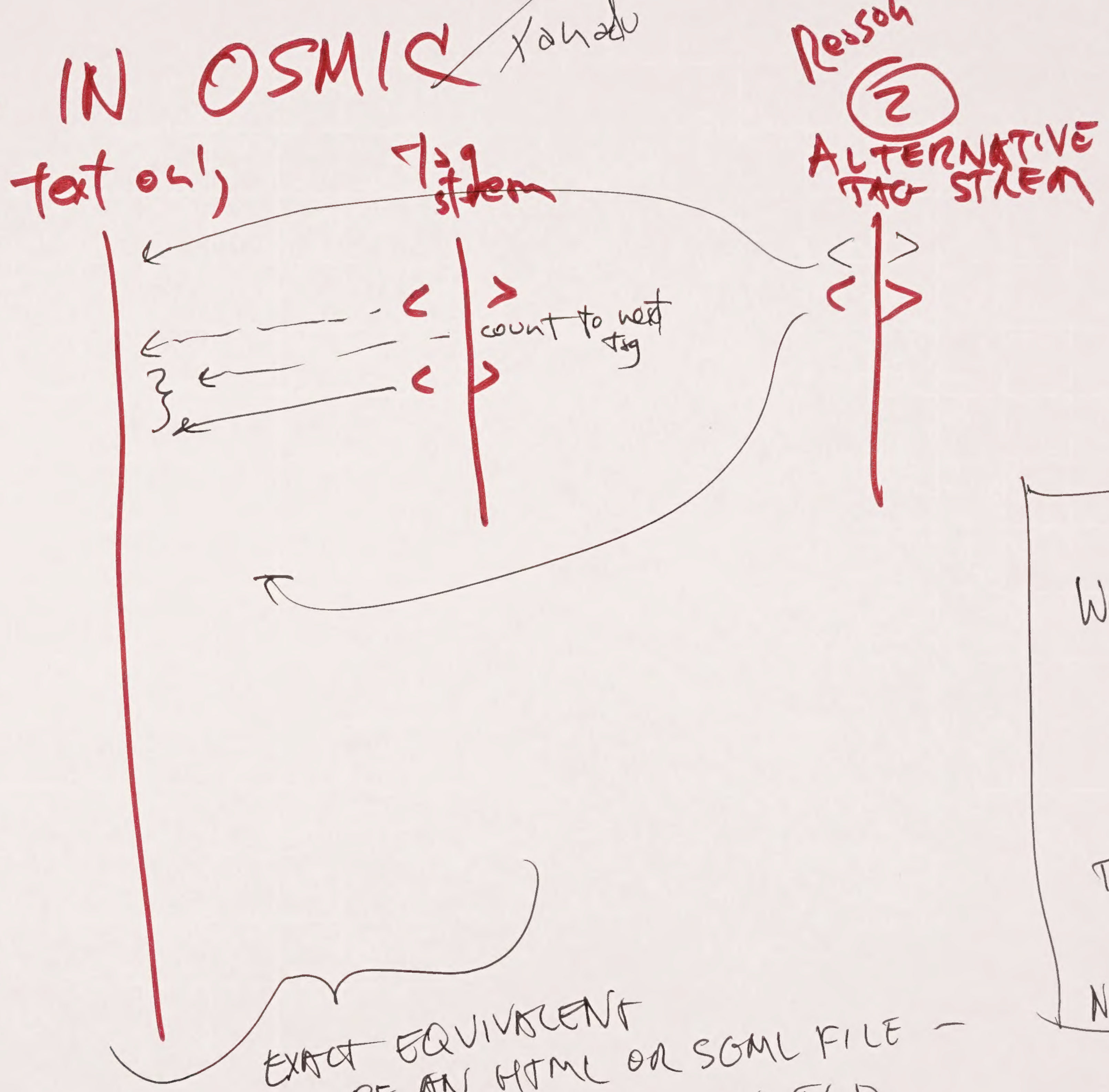
[After some of the guys left]

VI

TAGS IN OSMIC ~~Xanadu~~

Reason ①

PURE TEXT COUNTING



EXACT EQUIVALENT OF AN HTML OR SGML FILE — BUT SPLIT IN TWO

We'll later break apart SGML and HTML to ~~sho~~ make them into sets of parallel streams.
This complicates the routines somewhat.
No hurry to get to this.

MAY 1 1997 [6]

VII

HOW WE SHALL PROCEED. (Kei's suggestion)

1. Define Protocol (FOR BASIC EDIT OPERATIONS AT FIRST)
2. Set up server (start with one)
   ROLLBACK FACILITY
   save stages (or versions) of Prozen file
3. BASIC EDIT OPS FOR EMACS