

Electronic Laboratory Notebooks

Key to scientific records and project notes



Presented by

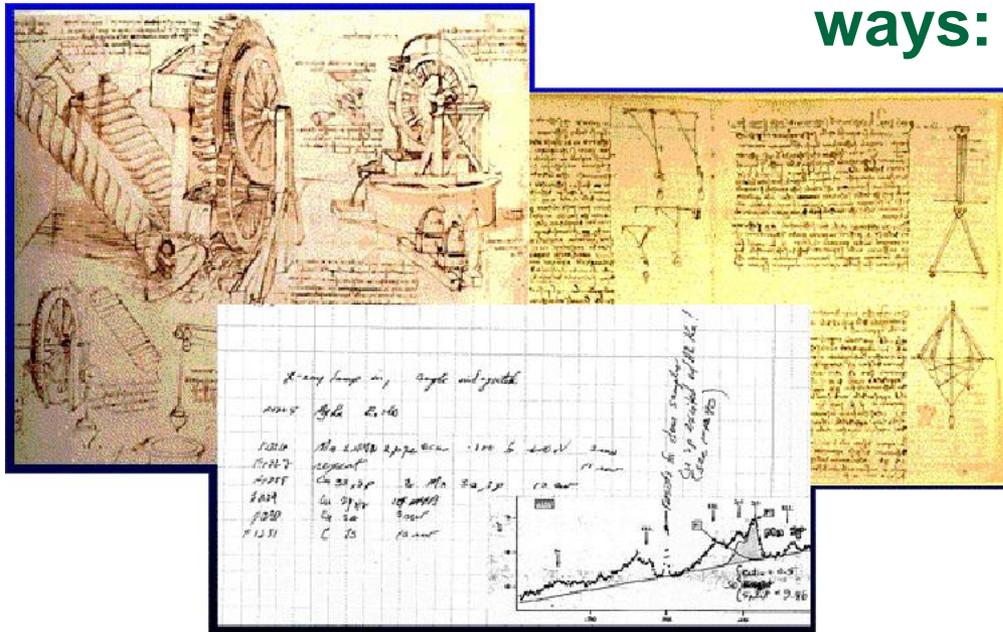
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Motivation for Notebooks

Laboratory Notebooks are the Heart of Scientific Research

Used in many different ways:

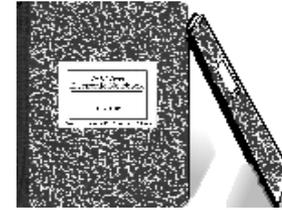


Personal notebook
Project notebook
Instrument log book
Design notebook

Experiment log book
Record keeping
Regulations

Notebook is a chronological record of ideas, data and events.

ORNL Electronic Notebook

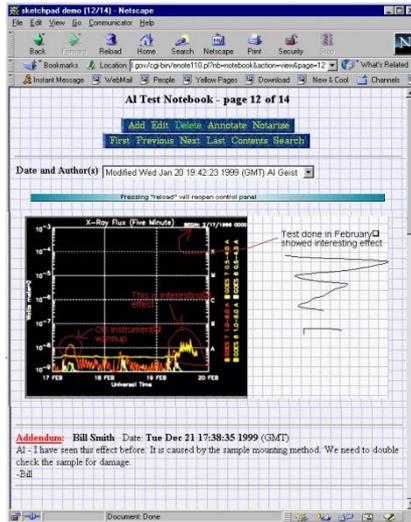


Shared electronic notebook

Accessible with password through secure web site



Reading entries



Drag and drop notes from private to shared notebooks



Annotation by remote colleagues

Personal (stand alone) notebook

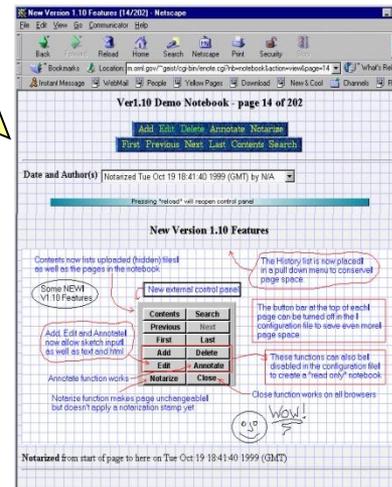


Advantages and Features

- ease of use, intuitive
- look&feel of paper notebook
- access from any web browser
- no software to install
- can be shared across group
- or setup as personal notebook
- can run stand alone on laptop

Input from

- Keyboard
- Files
- Images
- voice
- Instruments
- sketchpad



www.csm.ornl.gov/~geist/

ORNL Notebooks Used in Production

The ORNL Electronic notebook software is freely available to:

General research community

Academia

Industry



Thousands of users worldwide

Hundreds of electronic notebooks have been set up across the DOE Labs in:

Collaborative projects

Beamline and instrument logs

Research groups

Latest installation is at the Spallation Neutron Source

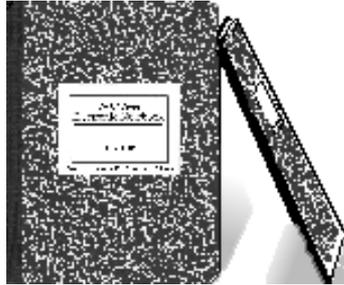
ORNL Basic Notebook Functionality

The screenshot shows the ORNL Basic Notebook interface. At the top, the title "Spallation Notebook - page 4 of 4" is displayed. Below the title is a control panel with two rows of buttons: "Add Edit Delete Annotate Notarize" and "First Previous Next Last Contents Search". Below the control panel is a "Date and Author(s)" field containing the text "Added Wed Jan 21 19:10:06 1998 (GMT) Al Gore" and a pull-down arrow. At the bottom of the control panel, a blue bar contains the text "Pressing 'reload' will reopen control panel". Red arrows point from labels to these features: "Modification buttons" points to the top row of buttons; "Notebook Title" points to the title; "Page location" points to the page number; "Navigation buttons" points to the bottom row of buttons; "Change history (pull down list)" points to the "Date and Author(s)" field; and "Searching" points to the "Search" button.

- ❑ Non-compliance features requested by users
 - Editing existing pages (until notarized)
 - Deleting pages (but not actually removed)

Can be disabled at setup

Many uses besides Compliant Notebooks



The technology lends itself to a broad set of uses many of which don't require any special compliance

Has been useful for acceptance, familiarity, and buy-in

Existing Uses:

- shared project notes
- proposal development
- meeting notes
- instrument logs
- centrally updated manuals
- (chemical) inventory
- distance learning
- teaching tool
- patient medical records
- medical research logs
- project tracking
- private notebooks

ORNL Electronic Notebook Users

Popular across a Broad Range of Users

Government

All DOE Labs
NASA
EPA
USDA
DOD

Industry

DuPont
Eli Lilly
Merck
3M
DynaCorp
Kellogg
EMS
Scripps Howard
Hydro-Quebec Power
BP Chemicals
Hoffmann La Roche
Many more...

Medicine

Mass. General Hospital
St. Jude's Children's Hospital
Chicago Medical Center
Sloan-Kettering Cancer Center
Walter Reed Army Hospital
Etc...

Education

Krell Institute
Ohio State
U. Delaware
SUNY
RPI
U. Mass.
NCSU
Penn. State
Portland State U.
Shodor Education Foundation
Many more...



www.csm.ornl.gov/~geist/java/applets/enote/users.html

Spallation Neutron Source (SNS) Notebooks

- **The electronic notebook software for the SNS is being developed based on the research done in this project.**
- **Support for different types of notebooks:**
 - **Instrument notebooks**
 - Record events and annotations regarding an instrument.
 - Structure fixed; entries can't be edited, but can be annotated.
 - **Proposal notebooks**
 - Contain research annotations for a proposal and its experiments.
 - Structure and editing policies under control of proposal PI.
- **Layered access control for SNS users and groups:**
 - Personal notebooks.
 - Shared proposal and instrument notebooks.
- **Web-based user interfaces using AJAX.**
- **Support for Wiki-formatting to support easy input of structured text.**
- **JCR-based storage system.**

Contact

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