



SeedMeLab.com

Share...

Manage...

Search...

Visualize...

...data, as never before!

- SeedMe = Stream, Encode, Explore and Disseminate My Experiments
- Cloud drives = Collective term for Dropbox, Google drive, etc
- FAIR data = Findable, Accessible, Interoperable and Reproducible data
- Consumable data = Ability to view/provide information about data beyond its filesystem attributes

Data creation ⁿ

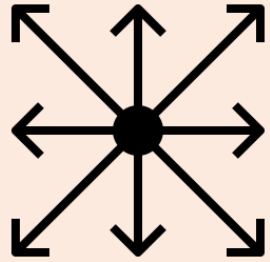
Data use/reuse ++

Research teams +

Trends

- Data doubling every year
- Sprawling data governance issues
- Open data and FAIR data mandates by Government & Sponsors

Lack of powerful and rich data management solutions



Information dispersion

- Scattered data and its context leads to content fragmentation and poor information/knowledge retention
- Cumbersome to maintain and enforce qualitative controls



Weak presentation

- Data presented without context makes its consumption difficult (Imagine Youtube as list of files/folders)



Dark data

- Lack of context makes data harder to search/find, its essentially lost from a practical standpoint
- Many cannot find their own data

Usual stumbling blocks

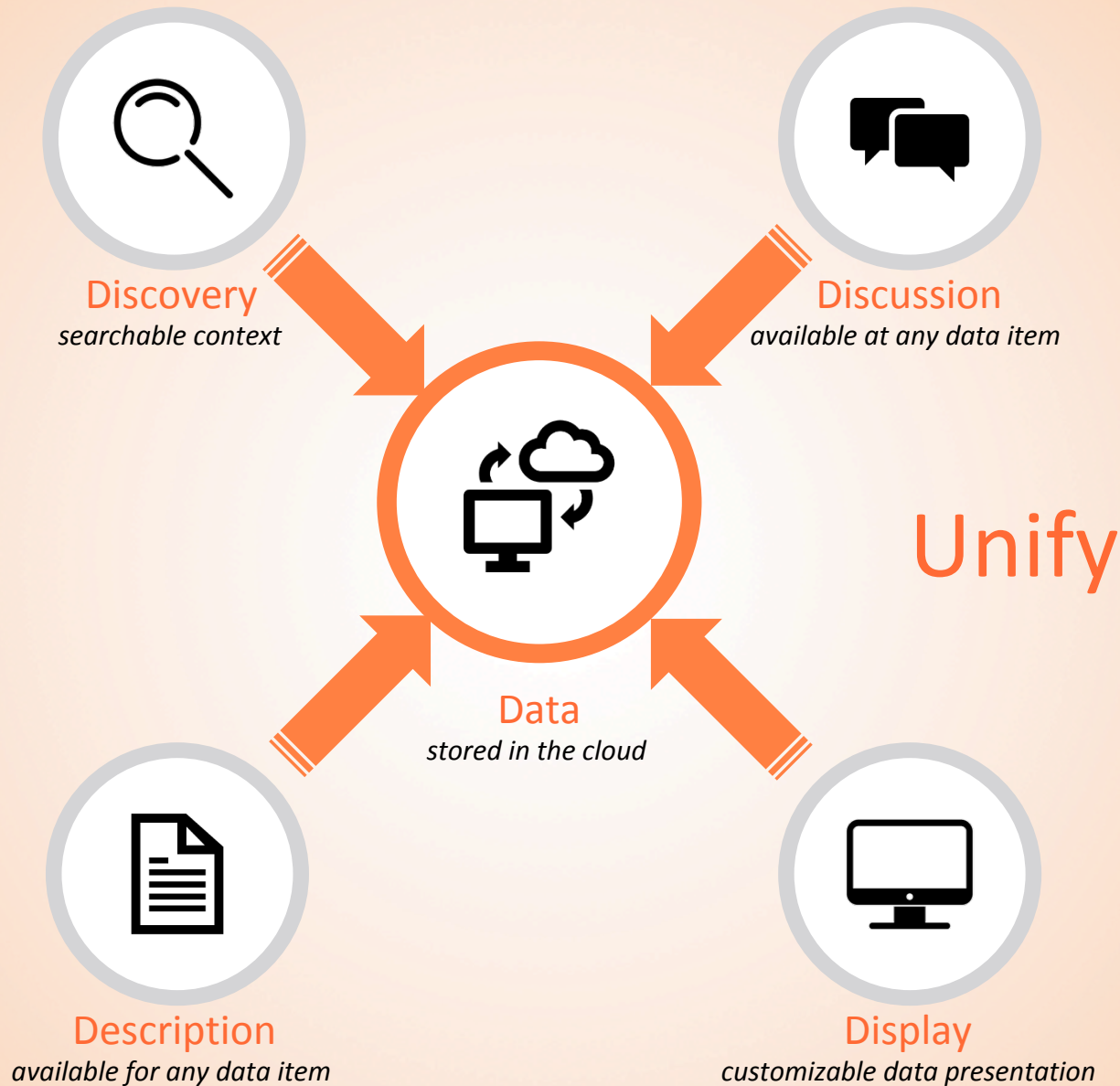
Access control

Collaboration

Storage

Transfer

Automation



A branded data website for your team and collaborators to accelerate productivity and retain context for the future.

Designed for researchers

Streamline and make your data more valuable. Accelerate your research with improved efficiency.

Organize and share data

Organize data as familiar folders/files and easily share it privately with collaborators or make it public.

Deep context

Add context to any data item and discuss it via a simple commenting system, which serves as an excellent resource when writing research articles.

Rich metadata

Add relevant fields along with your data for quick and easy reviewing, filtering, and searching.

Visualize and present

Present your data in a consumable form via automatic visualizations and rich text with scientific notation.

Extend your brand

Add distinction to your brand and data by including your domain name, logo, and layout or even use your Group's website.

Integrate

Automate your data flow with our REST client.

Versatile access

Access your data on phone, desktop or supercomputer.

laserplasma.ucsd.edu

Side-by-Side Comparison

SeedMeLab

Relativistic Laser-Plasma Simulation Group

Q Search...

DATA MY ACCOUNT LOG OUT

Home » Personal files

Personalized branding, domain & layout

Coulomb Implosion

Owned by you

Q Search folder...

Name	Modified	Owner	Size
Total electric field Snapshots of the total electric field $E = \sqrt{E_x^2 + E_y^2}$. The color-coding is	Mon, 01/28/2019 - 14:10	John Doe	25.65 MB
s_n_e Snapshots of the electron density. The color-coding is n_e in 1/m3.	Mon, 01/28/2019 - 14:26	John Doe	6.90 MB
OpenGL mesh memory use.csv Bench mark of OpenGL performance	Mon, 01/28/2019 - 14:10	Carl Smith	1.30 KB
input.deck Input parameters used in this simulation	Mon, 01/28/2019 - 14:10	Carl Smith	4.35 KB
E_tot_0011.png Snapshot of final total energy	Mon, 01/28/2019 - 14:10	Carl Smith	719.40 KB

5 items | [Image slideshow](#)

PIC simulations of a rectangular plasma with a cavity irradiated by 4 laser pulses.

$\lambda = 1 \mu\text{m}$ - laser wavelength;

$I = 5 \times 10^{18} \text{ watt/cm}^2$ - peak intensity of each laser pulse;

$n_e = n_i = 30n_{crit}$ - initial electron and ion densities;

$R = 60 \text{ nm}$ - radius of the cavity;

cell size is 2 nm by 2 nm; 20 electron macro-particles and 20 ion macro-particles per cell;

Laser electric field is in the plane of the simulation;

Each pulse is $\Delta t = 20 \text{ fs}$ long, with the field envelope given by $(1 - \cos(2\pi t/\Delta t))/2$.

Google Drive

Q Search Drive

My Drive > Coulomb Implosion

Name	Owner	Last modified
Total electric field	me	2:24 PM me
s_n_e	me	2:27 PM me
OpenGL mesh memory use.csv	me	2:24 PM me
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Side-by-Side Comparison

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Relativistic Laser-Plasma Simulation Group

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Description on any item

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Q Search folder...

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<div style="background-color: #0056b3; color: white; padding: 2px;">Total electric field</div> <div style="font-size: x-small; color: #0056b3;">Snapshots of the total electric field $E = \sqrt{E_x^2 + E_y^2}$. The color-coding is</div>	Mon, 01/28/2019 - 14:10	John Doe	25.65 MB
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My Drive > Coulomb Implosion ▾

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 $I = 5 \times 10^{18}$ watt/c
 $n_e = n_i = 30n_{crit}$ -
 $R = 60 \text{ nm}$ - radius
 cell size is 2 nm by 2
 Laser electric field is
 Each pulse is $\Delta t = 1$

FolderShare comments

Submitted by Carl Smith on Mon, 01/28/2019 - 14:13

[Permalink](#)

OpenGL benchmark

I have added the results from OpenGL benchmarks

Edit
 Reply

Discussion on any item

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☰
🔍 Search folder...

OpenGL mesh memory use.csv

Shared with you by Admin Guy

OpenGL mesh memory use.csv (1296 bytes)

Bench mark of OpenGL performance

Google Drive

🔍 Search Drive
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⚙️
☰
🔔

My Drive > Coulomb Implosion

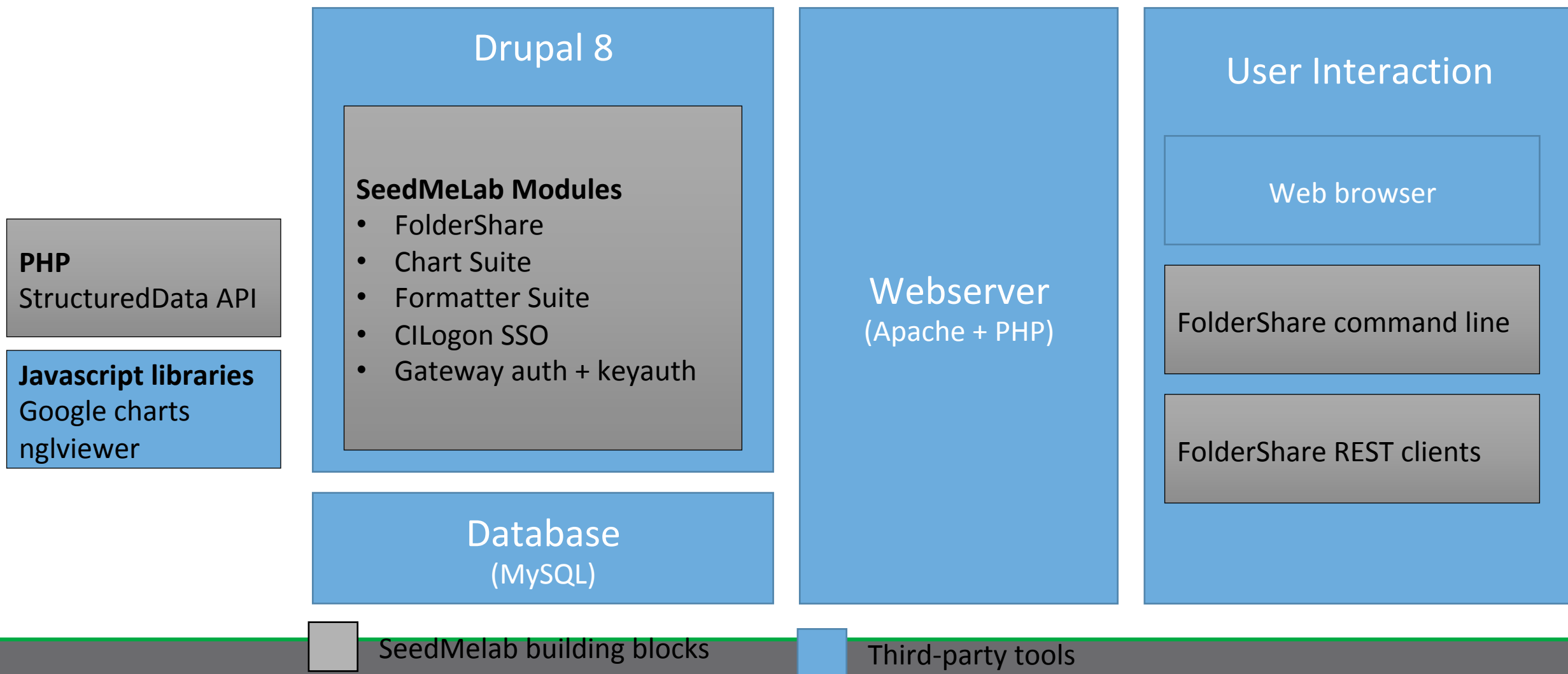
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<div style="background-color: #0056b3; color: white; padding: 2px;">1blu.pdb</div> Owned By Cheungstephen3		2:24 PM me
<div style="background-color: #0056b3; color: white; padding: 2px;">[Image]</div>		2:24 PM me

“Thanks to SeedMeLab, my inbox is decongested. I am able to provide swift and actionable feedback to my team. Not only that, but all data shared by my group is in one place, which makes it much easier to write research papers.”

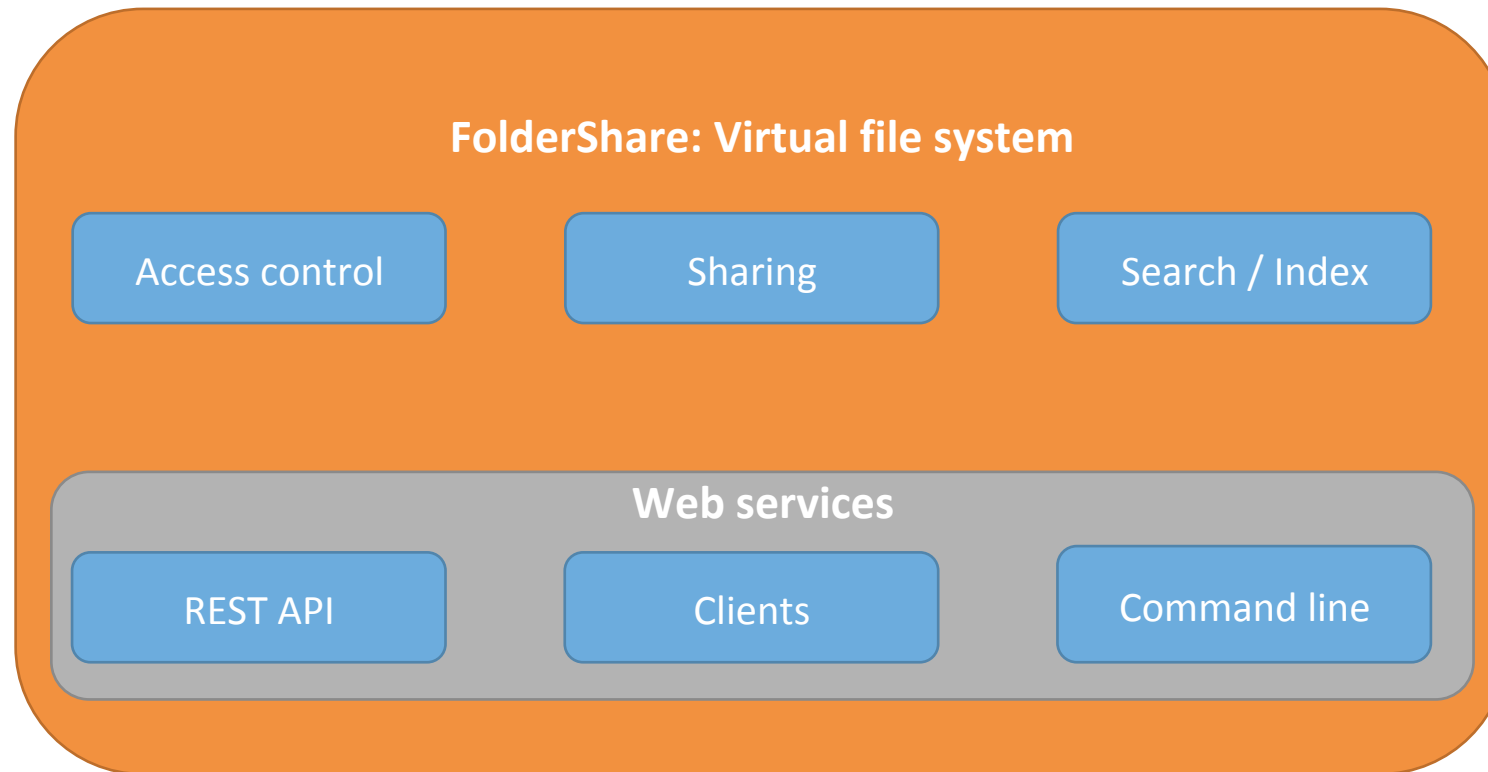
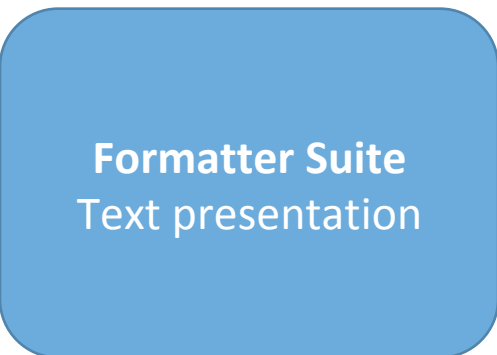
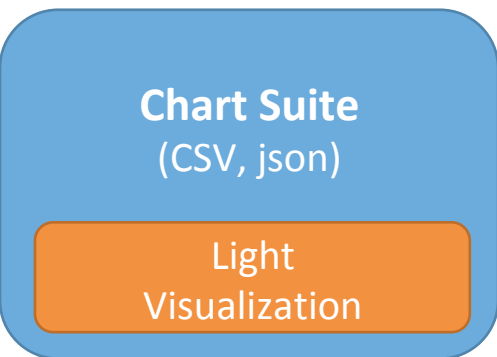
Automatic visualization

- Alexey Arefiev, UC San Diego

SeedMeLab Architecture



SeedMelab modules





module

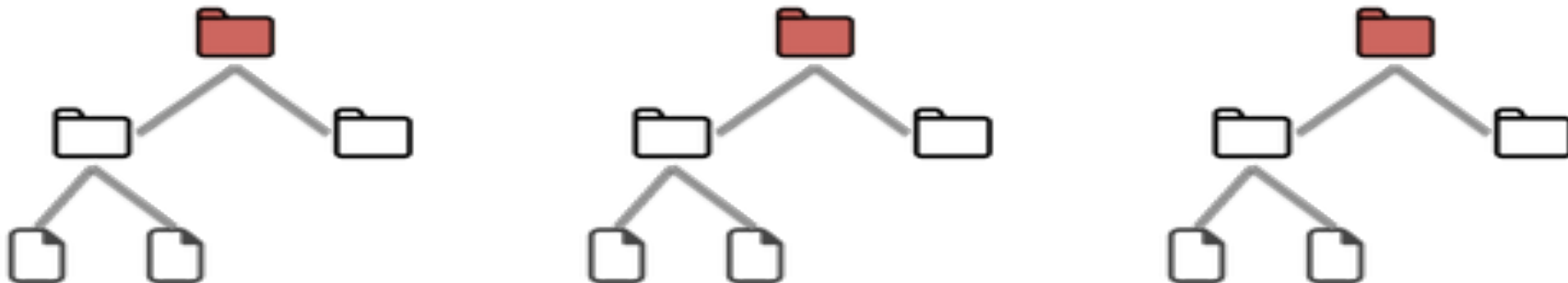
- **Virtual file system (fieldable)**
 - Entity data model & access controls
 - File management & security
 - Display using Views
 - UI & Command plugins
 - Search
 - Web services
- **Configurable by sites**
 - Add new fields e.g. Keywords, comments, flags, DOIs
 - Customize data display
- **Extensible by developers**
 - Develop custom plugins
 - Explore API at <http://api.try.seedme.org>

FolderShare: Data sharing

User may grant following privileges

- None (default)
- View (read only)
- Author (read, write and delete)
- Public (readable by anyone visiting the site)

Data sharing is supported from top-level files/folders





module

Automatically generates visualizations of text data in CSV & JSON formats

- Configurable with FolderShare or as a standalone Drupal module

Uses

- Structured Data API (parses and writes table, trees & graphs)
- Google Charts JavaScript library



FORMATTER SUITE

module

Provides 17 additional field/file formatters for Drupal 8 core

- Numbers in scientific notation
- Image with embedded data URL
- ...

CILogon Auth module

Single SignOn (SSO) from academic institutions (2,500 + world wide)

Uses CILogon service that provides free authentication

- ~~Avoids hassle with Shibboleth, SAML, etc~~
- Override site wide registration/activation issues
- Set Role for users logging in via SSO
- Generate better usernames
- Store organization info for user
- Integrates with User Restriction module for further customization

Target users/Use cases

- **Researchers**
 - Collaboration or personal data hub
- **Project repositories**
 - Add project specific customization (e.g. taxonomy, keywords)
- **Developers**
 - Integrate/build new application with managed data backend
- **Science gateways**
 - Data sharing
 - Data publishing
 - Data escrow service
- **CyberInfrastructure providers**
 - Offer SeedMeLab platform to your user base/communities

SeedMelab production ready

Try it yourself: seedmelab.org or dibbs.seedme.org

Project team: Amit Chourasia, David Nadeau & Michael Norman

Acknowledgements

All users and application integrators for their valuable feedback

National Science Foundation

This material is based upon work supported by the National Science Foundation under Grant No. ACI-1443083

"Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."