MacKenzie Smith Intro

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Background

• Academic research libraries
• Information Technology & Administration
• Open Source Software and university/industry collaborations
• Research & Development
R & D

Technology applications for libraries and higher education

• Digital libraries and archives (DSpace, ORCID, VIVO)
• Research data curation, data governance (ARL, CC)
• Semantic Web tools for data integration and visualization, e.g.
  Simile/Exhibit   www.simile-widgets.org/exhibit3
Repository Problem (2002)

- Repositories (e.g. DSpace) manage many data types
- Metadata has diverse models, representations
- Current XML/RDBMS support doesn’t scale
SIMILE Goals

Make metadata interoperability a reality for digital libraries by

• providing reusable, open source software for browsing, searching and mapping heterogeneous metadata

• using Semantic Web technologies to enable recombinant metadata
The Simile Tool Chain
Exhibit

• Publishing framework for Data-Rich interactive Web pages

• Create web pages with advanced search, faceted navigation, interactive maps and timelines, etc.
US Cities by Population

Using Exhibit, you can make this map with just the two simple files you see in this directory. Could you have built the same map with as little effort using anything else?
User Interfaces Supporting Casual Data-Centric Interactions on the Web, Doctoral Thesis at MIT EECS / CSAIL, David F. Huynh
Exhibit usage

• In thousands of Web Sites

• Across a range of diverse industries
  – Cultural heritage, libraries, publishers, medical research, life science and government

• Common theme - rapidly publish and navigate data on the web
# E. coli genotypes/Exhibit

11 items total

<table>
<thead>
<tr>
<th>#</th>
<th>Name (link)</th>
<th>Label</th>
<th>Type</th>
<th>URL</th>
<th>Purpose</th>
<th>Resistance</th>
<th>Requires</th>
<th>Genotype</th>
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| 1 | AG1 | AG1 | Item | [http://openwetware.org/openwetware/0...p/Exhibit/item#AG1](http://openwetware.org/openwetware/0...p/Exhibit/item#AG1) | cloning | nalidixic acid | thiamine | amdA1, mceA1, gyA56, thi-1, relA1, gapI44, hsdR1? (K- mK+)
| 2 | BL21(DE3) | BL21(DE3) | Item | [http://openwetware.org/openwetware/0...hbit/item#BL21(DE3)](http://openwetware.org/openwetware/0...hbit/item#BL21(DE3)) | protein expression | chloramphenicol | | F-,ompT,gal, dcm, lon, hsdS3M(8- mB3), lacIq, lambda, lacUV5-T7 gna 1, ind1, sam7, min5 |
| 3 | BL21(DE3) pLysS | BL21(DE3) pLysS | Item | [http://openwetware.org/openwetware/0...m#BL21(DE3)%20pLysS](http://openwetware.org/openwetware/0...m#BL21(DE3)%20pLysS) | protein expression | chloramphenicol | | F-,ompT, gal, dcm, lon, hsdS3M(8- mB3), lacIq, lambda, lacUV5-T7 gene 1, ind1, sam7, min5, pLysS(cmr) |

Description: The pLysS plasmid (with chloramphenicol resistance) encodes T7 phage lysozyme, an inhibitor for T7 polymerase which reduces and almost eliminates expression from transformed T7 promoter containing plasmids when not induced.
Exhibit 3.0

- MIT Libraries, MIT CSAIL, Zepheira

- 12 month program to deliver new platform

- Supported by Library of Congress
Key New Requirements

• Scalable up to 1 million triples and 20K facet values

• Provide server-side option for publishing large collections

• Support incremental updates of views in the UI

• Easier to add new views, widgets and facets
Modularity

• Embed Exhibit in a software tool chain and/or a separate system (e.g. VIVO, Sakai, WordPress)

• Provide easy ways to call Exhibit modules and address individual components (e.g. views) in separate web pages