create your own digital exhibit
Today we will discuss a tool for creating digital exhibits.
Outline

1. Digital exhibits: What and why? (9:00am, 30min)
2. Designing a compelling digital exhibit (9:30am, 30min)
3. Break (10:00am, 10min)
4. Using the DSP tool (10:10am, 1hour)
5. Usage policies (11:10am, 10min)
6. Hands-on (11:20am, 40min)
Digital Exhibits: What and Why?

Some source

Data

What?

Digital Exhibit
A data-driven interactive presentation of a story

Why?

1. Public engagement
   - Leverage the web to communicate your research or archive
2. Visual aid for teaching
Examples

• Prototypes:
  1. NUS Libraries Milestones
  2. Port Cities in the Age of Commerce: Iberian presence in early Southeast Asia
  3. Women: A Bibliography from the Singapore-Malaysia Collection, NUS Libraries
  4. Endangered Crabs of Singapore
  5. Sketching Everyday Moments
  6. History of Western Music

• Digital exhibits serve purpose of presenting stories, as opposed to facilitating exploratory data analysis
## Digital Scholarship Portal (DSP) - Beta

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fairly easy to use</td>
<td>1. Full-text not discoverable by Google’s crawlers</td>
</tr>
<tr>
<td>2. Handy for rapid, iterative prototyping</td>
<td>2. Some bugs exist</td>
</tr>
<tr>
<td>3. Hosted website within a few clicks</td>
<td>3. Lack of documentation</td>
</tr>
<tr>
<td>5. Highly configurable interactivity</td>
<td>5. Ephemeral, no guarantee for perpetual access</td>
</tr>
<tr>
<td>6. Easy data updating</td>
<td></td>
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Handy Requisites for Using DSP

• Logical thinking
• Framing content into an interesting narrative
• Familiarity with relational data
• Visual communication principles
Designing a Compelling Digital Exhibit
Considerations

1. Expressiveness
2. Effectiveness
3. Engagement
Expressiveness

- A visualisation is considered expressive if it encodes all relevant information and only that information (Mackinlay, 1986)

- Maximise “data-ink ratio” (Tufte, 1983):

Data-ink

Total ink used to print graphic

(proportion of a graphic’s ink devoted to the non-redundant display of data-information)
Effectiveness

• Data should be encoded with the right choice of visual variables such that information is readily perceived (Mackinlay, 1986)

Types of Data
• Nominal
• Ordinal
• Interval
• Ratio

Bertin’s Visual Variables

[Image: Bertin’s Visual Variables, 1967]
Effectiveness

• Ordinal data should be shown in a way that our perceptual system intrinsically senses as ordered (Muzner, 2014)

  • Position: Left to right = less to more
  • Density: Darker = more
  • Volume/size/length: Larger = more
  • Hue: Little intrinsic meaning
  • Shape: Little intrinsical meaning
  • Texture: Little intrinsic meaning

[Muzner, Visualization analysis and design, 2014]
Effectiveness

Jock Mackinlay, 1986

Quantitative
- Position
- Length
- Angle
- Slope
- Area
- Volume
- Density
- Saturation
- Hue
- Texture
- Connection
- Containment
- Shape

Ordinal
- Position
- Density
- Saturation
- Hue
- Texture
- Connection
- Containment
- Length
- Angle
- Slope
- Area
- Volume
- Shape

Nominal
- Position
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- Density
- Saturation
- Shape
- Length
- Angle
- Slope
- Area
- Volume

[MacKinlay, Automating the Design of Graphical Presentations of Relational Information, 1986]
Engagement

• Interactivity may stimulate and satisfy curiosity
• Invite user to unfold the narrative and co-create the experience of the story
Conceptualisation

1. Identify gap or significance based on audience
2. Conceive clear narrative
3. Conceive variable(s) central to narrative
4. Conceive visualization of variable(s)
   • Storyboarding incorporating expressiveness, effectiveness & engagement
5. Conceive interactivity
   • How you want the viewer to unfold the narrative
Planning

- Identify sources
  - Access issues – copyright, licensing, privacy

- Data collection
  - Resource availability
  - Manual, automated or semi-automated
  - Geocoding for geographic data

- Assess feasibility
  - Can the tool do what you want?
Data Collection / Wrangling

- Organise information into tables suitable for rendering
- Remove irrelevant rows
- Clean cells with exceptional values
  - Format, data type of cells within column should be consistent (e.g., date format, number), otherwise they can cause error in tool
- Summarize long text if necessary
- Use UTF-8 Encoding
Conceptualisation

Planning

Data collection / wrangling

Design Layout & Interactivity
Iterative Refinement

- DSP affords quick and easy preview with sample data, which facilitates iterative communication with stakeholders and on-the-spot refinement
Using the DSP Tool
Steps to Creating a New Digital Exhibit

1. Log in with DSP account
2. Create project
3. Create page(s)
4. Design layout
5. Set data
6. Configure interactivity
7. Create navigation
Log in with workshop accounts

http://libds.nus.edu.sg/login
CREATING A NEW PROJECT

Hello admin!
Log Out

19 Research Projects Created.

Start New Project

PORTAL MANAGEMENT

Projects
Administrators
My profile

You have 19 projects:

- NUS Libraries Milestones
- Japanese Theatre Performances in Singapore 1965-2015
- Sense Of History

NUS Libraries Milestones
Historical Milestones of NUS Libraries

Japanese Theatre Performances in Singapore 1965-2015
Japanese cultural influence in post-independence Singapore

Sense Of History
Prototype to visualize the subject headings of materials in Sense of History
Terminology

• “Project” refers to the website.
• “Project” can contain zero or more “pages”.
• “Navigation” refers to menu items that link to different “pages”.
• “Data source” refers to data which feeds to widgets for rendering.
CREATING A NEW PROJECT

Sample Title
Benjamin
View Author's Homepage

01. Project Details

PROJECT TITLE *
Sample Title

DESCRIPTION *
Sample description

SUBJECT *
Business

02. Author

AUTHOR NAME *
Benjamin

HOMEPAGE URL
https://benjamin.com

PUBLISHER
https://publisher.benjamin.com

03. Other information

LANGUAGE *
English

FORMAT/Types of files in project

COVERED/SPATIAL

ADMINISTRATION DETAILS

FEATURE PROJECT

SLUG - AVAILABLE

CREATED BY
admin

CREATED ON
25th August 2018, 01:49 PM

COLLABORATORS
There aren't any collaborators yet.

ADD COLLABORATORS

Save Project
CREATING A NEW PAGE

Please click Save and Preview to save your changes.

Sample Title

Benjamin

View Author's Homepage

Page Design for Untitled

Design Your Dashboard

Click here to start designing your page
CREATE A PROJECT

Let’s start by creating a project by filling up the form.

Add Your UI Block

Filter

DATA WIDGETS - DATA VISUALIZATION GRAPHS

- Pie Chart
- Line Chart
- Line with Focus Chart
- Bar with Focus Chart
- Radar Chart
- Bar Chart
Configure

Delete widget
You see this because no data source has been configured for the widget.
Add a data source
Datasources available: 1

**BACK TO PROJECT**

**DATASOURCE ENGINEERING FOR TEST**

1. **UPLOAD DATA**
   Upload your CSV, JSON or JSON data file to begin.

2. **TRANSFORM STEPS**
   Clean, transform and prepare your data using transformation actions.

3. **PROCESS DATA**
   Click on 'Process Now' button to save and apply transformations to the entire file.

**UPLOAD DATA**
1. Download this file
2. Take a look at the file
3. then Upload it

our sample data today

nusds.sg/libdata.csv
Potential benefits:
Easier updating as compared to WordPress
To go back to the page you were working on, click on the respective item under “PAGES”.

After you click “Back to Project” you will be brought to the project details page...
Now we need to design the page by selecting desired widgets.
Add “Text Slider” widget, followed by “Row List”.
Click this to set the data source + configure interactivity.
What does this do?
Do the same to configure the Row List widget to read from data source...
Please click Save and Preview to save your changes.
FIRST LIBRARY

Year: 1905

Establishment of the Straits and Federated Malay States Government Medical School.
It contains a library and reading room.

MEDICAL LIBRARY MOVES

Year: 1923

Medical Library moves to the College of Medicine building.
Usage Policies of DSP Tool

• Accounts available for request on a case-by-case basis for faculty, research staff, graduate students


• If you have questions, contact us at: libds@nus.edu.sg
Hands-on

• Add a title to the page
• Add and configure a Singapore Historical Map widget
• Add an “about” page + navigation
Thank You

Please let us know how we can improve our workshops

http://j.mp/RUfeedback
DSP Scheduled Maintenance

28 Aug 8.30pm to 29 Aug 1.30am
References


