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Visualizations for the Digital Humanities Using Tableau

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Visualizations for the Digital Humanities Using Tableau

Jennifer L. Murray
UNF Digital Humanities Workshop
November 22, 2019

What is Tableau?

- Tableau is an easy-to-use business intelligence software used for data analysis.
- Tableau natively connects to dozens of data sources, including Oracle and MS-SQL, as well as local sources like MS-Access and Excel.
- Once connected you use drag and drop tools to visualize and create interactive dashboards.
- Visualizations can be presented to your audience via PDF, Tableau Reader, Tableau Server or Tableau Public.



What is Visual Analytics?

- It's Storytelling
- **News4Jax** tells a story every day



Tableau Desktop

- Data visualization software that provides the ability to create interactive workbooks and dashboards to see and understand data in minutes.
- Tableau Desktop License
 - \$630/year for Desktop Professional License
 - **FREE** for full time students, instructors and non-profit researchers:
 - <https://www.tableau.com/academic>
 - <https://www.tableau.com/academic/teaching/course-licenses>

Tableau Desktop – Data Connections

- Connections to over 32 data sources and Drivers
 - Oracle, Microsoft SQL, MySQL, DB2
 - Microsoft Access, Excel, PowerPivot and Text
 - Any ODBC Compliant data source
- Actian Vectorwise, Amazon Redshift, Cloudera Hadoop, Cloudera Impala, DataStax, EMC Greenplum, Firebird, Google Analytics, Google BigQuery, Hortonworks, HP Vertica, BM DB2, IBM Netezza, MapR Distribution, Microsoft Access, Microsoft Excel, Microsoft PowerPivot, Microsoft SQL Server, Microsoft SQL Server Analysis Services, Microsoft Windows Azure, MySQL, OData, Oracle, Oracle Hyperion Essbase, ParAccel Analytic Database, PostgreSQL, Progress OpenEdge, Salesforce.com, Force.com, Database.com, SAP HANA, SAP NetWeaver Business Warehouse, SAP Sybase, Teradata, Teradata Aster Data nCluster...

Tableau Desktop – Graphic Types (over 90 types)

- Area Chart
- Bar Chart
- Bubble Chart
- Bullet Graph
- Box Plot (w/ Whiskers)
- Gantt Chart
- Dot Plot
- Histogram
- Line/Area Chart
- Maps (Geographical and Heat)
- Pie
- Scatter Plot
- Text Table/Crosstab
- Tree Map
- Word Cloud

Tableau Desktop – Distributing Reports

- PDF, JPG, Data
- Tableau Reader
- Tableau Server
- Tableau Online
- Tableau Public
- Embed on a webpage
- Video recording – Skype or Camtasia



<https://www.tableau.com/products>

Tableau Public

- Making your reports and potentially YOUR DATA available to 7 Billion of your closest friends
 - De-identify everything
 - Strip out non relevant data
 - Do not allow download
- FREE with restrictions
 - Support for data sets of up to 10 million rows
 - Storage limit of 10 GB
 - Data source limitations – i.e. Excel, Text, Access files

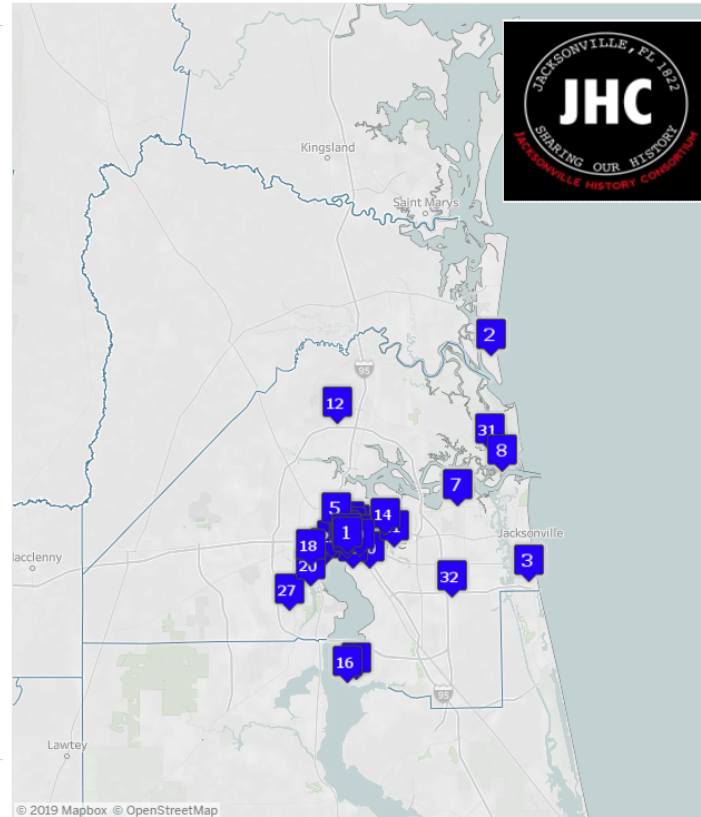


Tableau Demo: Mapping

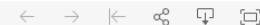
Jacksonville History Consortium Members

| Organization Name | |
|---|----|
| Jacksonville History Consortium | 1 |
| AdLib Tours | 2 |
| American Beach Museum | 3 |
| Beaches Museum and History Park | 4 |
| COJ Historic Preservation - Jax Planning and D. | 5 |
| Durkeeville Historical Center | 6 |
| Eartha M. M. White Historical Museum | 7 |
| Fort Caroline National Memorial | 8 |
| Fort George Island/Kingsley Plantation | 9 |
| Jacksonville Fire Museum | 10 |
| Jacksonville Genealogical Society | 11 |
| Jacksonville Historical Society | 12 |
| Jacksonville International Airport Aviation Gal. | 13 |
| Jacksonville Public Library - Special Collections | 14 |
| Jacksonville University Archives | 15 |
| Karpeles Manuscript Library | 16 |
| Mandarin Community Club | 17 |
| Mandarin Museum and Historical Society | 18 |
| Murray Hill Preservation Association | 19 |
| Museum of Science and History | 20 |
| Museum of Southern History | 21 |
| Norman Studios | 22 |
| North Florida Land Trust | 23 |
| Old Arlington Inc. | 24 |
| RAP - Riverside Avondale Preservation | 25 |
| Ritz Theatre and Museum | 26 |
| San Marco Preservation Society | 27 |
| Southern Genealogist's Exchange Society | 28 |
| Springfield Improvement Association and Arch. | 29 |
| Springfield Preservation and Revitalization Co. | 30 |
| St. Nicholas | 31 |
| Timucuan Ecological and Historic Preserve | 32 |
| UNF Library | 32 |

CLICK TO RESET MAP



+ a b l e a u



- Tableau Public: https://public.tableau.com/views/Jacksonville-History-Consortium-Map/Jax?:display_count=y&:origin=viz_share_link
- Embedded in Library Guide: <https://libguides.unf.edu/jhc>

Tableau Worksheet

Pages shelf: Creates a set of pages with a different view on each page

Filters shelf: Allows you to specify which data to include and exclude

Dimensions: Fields that cannot be aggregated

Measures: Fields that can be measured, aggregated or used for mathematical operations

Marks card: Add context and detail to your view

Dashboard: Collection of views from multiple worksheets

Story: Sequence of worksheets or dashboards that work together to convey information

The screenshot shows the Tableau Desktop interface with a map of Jacksonville, Florida, overlaid with numbered blue location markers. The interface includes a menu bar at the top, a toolbar, and several shelves: Pages, Filters, Marks, and Dimensions. The Dimensions shelf contains fields like Address, City, Google Map Link, Hours, Logo, Organization Name, Phone, Website, State, and Zip. The Measures shelf contains Latitude, Longitude, X-Axis, Y-Axis, and generated fields. The Marks card is set to Shape. The right sidebar shows a list of organization names. The bottom status bar displays '31 marks 1 row by 1 column SUM of AVG(Longitude): -2,530.2356'.

Tableau Demo: Text Analysis

TOP WORDS WITH READER

Select Texts: Constitution | Select Field: Text1 | Highlight Word: president

Select a text from the filters to the right, then enter a word to highlight (or select the word from the list of most commonly used words). That word will then be highlighted within the full text. Note: Click the gear icon to change options such as whether or not to include stop words in the most commonly used words.

Most Commonly Used Words

| |
|----------------------|
| shall - 306 |
| states - 129 |
| president - 121 |
| united - 85 |
| state - 79 |
| congress - 60 |
| may - 44 |
| law - 39 |
| office - 37 |
| vice - 36 |
| amendment - 35 |
| person - 34 |
| house - 33 |
| one - 29 |
| representatives - 29 |
| article - 28 |
| senate - 28 |
| constitution - 25 |
| number - 25 |
| two - 24 |
| power - 22 |
| section - 22 |
| thereof - 22 |
| years - 22 |
| time - 21 |
| within - 20 |
| 1 - 18 |
| 2 - 18 |
| citizens - 18 |

Full Text

Constitution

we the people of the united states in order to form a more perfect union establish justice insure domestic tranquility provide for the common defence promote the general welfare and secure the blessings of liberty to ourselves and our posterity do ordain and establish this constitution for the united states of america article 1 section 1 all legislative powers herein granted shall be vested in a congress of the united states which shall consist of a senate and house of representatives section 2 the house of representatives shall be composed of members chosen every second year by the people of the several states and the electors in each state shall have the qualifications requisite for electors of the most numerous branch of the state legislature no person shall be a representative who shall not have attained to the age of twenty five years and been seven years a citizen of the united states and who shall not when elected be an inhabitant of that state in which he shall be chosen representatives and direct taxes shall be apportioned among the several states which may be included within this union according to their respective numbers which shall be determined by adding to the whole number of free persons including those bound to service for a term of years and excluding indians not taxed three fifths of all other persons the actual enumeration shall be made within three years after the first meeting of the congress of the united states and within every subsequent term of ten years in such manner as they shall by law direct the number of representatives shall not exceed one for every thirty thousand but each state shall have at least one representative and until such enumeration shall be made the state of new hampshire shall be entitled to choose three massachusetts eight rhode island and providence plantations one connecticut five new york six new jersey four pennsylvania eight delaware one maryland six virginia ten north carolina five south carolina five and georgia three when vacancies happen in the representation from any state the executive authority thereof shall issue writs of election to fill such vacancies the house of representatives shall choose their speaker and other officers and shall have the sole power of impeachment section 3 the senate of the united states shall be composed of two senators from each state chosen by the legislature thereof for six years and each senator shall have one vote immediately after they shall be assembled in consequence of the first election they shall be divided as equally as may be into three classes the seats of the senators of the first class shall be vacated at the expiration of the second year of the second class at the expiration of the fourth year and of the third class at the expiration of the sixth year so that one third may be chosen every second year and if vacancies happen by resignation or otherwise during the recess of the legislature of any state the executive thereof may make temporary appointments until the next meeting of the legislature which shall then fill such vacancies no person shall be a senator who shall not have attained to the age of thirty years and been nine years a citizen of the united states and who shall not when elected be an inhabitant of that state for which he shall be chosen the vice president of the united states shall be president of the senate but shall have no vote unless they be equally divided the senate shall choose their other officers and also a president pro tempore in the absence of the vice president or when he shall exercise the office of president of the united states the senate shall have the sole power to try all impeachments when sitting for that purpose they shall be on oath or affirmation when the president of the united states is tried the chief justice shall preside and no person shall be convicted without the concurrence of two thirds of the members present judgment in cases of impeachment shall not extend further than to removal from office and disqualification to hold and enjoy any office of honor trust or

Created by Ken Flerlage

Data Source: Words.csv

<https://public.tableau.com/profile/ken.flerlage#!/vizhome/TextAnalysisStarterKit/00ChartMenu>

Tableau DHI Examples

- Starter Kit for Text Analysis
<https://www.kenflerlage.com/2019/09/text-analysis.html>
- Search for “Digital Humanities” in Tableau Public
<https://public.tableau.com/en-us/search/all/digital%20humanities>
- 3 Easy Steps to Make Graphs
<https://digitalhumanities.berkeley.edu/blog/17/06/26/3-easy-steps-make-graphs-tableau>
- Add Image of Google Maps and OpenStreetMap as Background Images in Tableau
https://help.tableau.com/current/pro/desktop/en-gb/bkimages_maps.htm
- U.S. Census Bureau Vizzes
https://public.tableau.com/profile/us.census.bureau?eml=gd&utm_medium=email&utm_source=govdelivery#!/

Other Tableau Resources

- Getting Started
https://help.tableau.com/current/pro/desktop/en-us/gettingstarted_overview.htm
- Free Training Videos
<https://www.tableau.com/learn/training>
- Tableau Add-In for Reshaping Data in Excel
<https://community.tableau.com/docs/DOC-10394>
- Viz of the Day
<https://public.tableau.com/en-us/gallery/?tab=viz-of-the-day&type=viz-of-the-day>

“I think telling stories with data is one of humanities most powerful tools for affecting change.”

(Loree 2019)

Loree, J. (2019). Tableau Public Authors. Retrieved from <https://public.tableau.com/search/authors/hr%20analytics>

Thank you!

Questions?

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