Design for Local Government and Citizen Engagement
Using Data science and Visualization
OVERVIEW

• About OpenGov
• Designing for Local Government
• How Government is designed to work
• Visualizing Finances and Accounting Systems
• History of Ledgers and Spreadsheets
• Data Science and Insights
We are transforming the way the world analyzes, shares, compares, and allocates public money by building the first smart, collaborative, and comparative SaaS platform to power the 21st century government.
OVERVIEW

Design is an art of communication.

Designing for local government is the same as for other systems:

- Understand user motivations, behavior, and goals
- Test product with real users and organizations
- Provide the right information at the right time
WHAT IF PUBLIC INFRASTRUCTURE WAS FUNDED BY THE CROWD?
DESIGN OF GOVERNMENT

“Governments spend money for a living”

★ **Taxes** — way of contributing to common goods & services

★ **Budgets** — translations of resources to human purposes

★ **Procurement** — acquisition of goods and services, often via public-private partnership
One of our goals is to provide citizens with a better view of how local governments spend money and provide services.
OpenGov shows the allocation of money over time and allows user to drill in by dimensions.
Visualization of the city of Oakland’s budget by OpenOakland.

Shows how do taxes and other revenues flow to services.
VISUALIZING MONEY

The proposal forecasts a $901 billion deficit.

Obama’s Budget NY Times; Market Watch Treemap
The General Ledger
## Legacy Systems

**A Chart of Accounts**

<table>
<thead>
<tr>
<th>Items Shown</th>
<th>Accounts</th>
<th>$</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date Range</strong></td>
<td></td>
<td>4/19/98</td>
<td>1/5/04</td>
</tr>
<tr>
<td><strong>Other Cost Accounts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spencer Agency</td>
<td>Other Cost Acc Active</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>State Sales Tax</td>
<td>Other Cost Acc Active</td>
<td>$6,769.00</td>
<td>$6,769.00</td>
</tr>
<tr>
<td>IRS- monthly withholding</td>
<td>Other Cost Acc Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>State Employment Taxes</td>
<td>Other Cost Acc Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Pennypacker Acc</td>
<td>Other Cost Acc Active</td>
<td>$475.08</td>
<td>$475.08</td>
</tr>
<tr>
<td>Miscellaneous Costs</td>
<td>Other Cost Acc Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>IRS- annual FUTA</td>
<td>Other Cost Acc Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>$12,244.08</strong></td>
<td><strong>$12,244.08</strong></td>
</tr>
<tr>
<td><strong>Subcontractor Accounts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paul Petercamp Painting</td>
<td>Subcontractor / Active</td>
<td>$938.23</td>
<td>$938.23</td>
</tr>
<tr>
<td>Ringstead Paperhanging</td>
<td>Subcontractor / Active</td>
<td>$1,841.02</td>
<td>$1,841.02</td>
</tr>
<tr>
<td>Schwartz Plumbing</td>
<td>Subcontractor / Active</td>
<td>$535.00</td>
<td>$535.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>$3,314.25</strong></td>
<td><strong>$3,314.25</strong></td>
</tr>
<tr>
<td><strong>Utility Accounts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unbilled Sales</td>
<td>Utility Accounts / Active</td>
<td>$521.80</td>
<td>$521.80</td>
</tr>
<tr>
<td>Unbilled Rentals</td>
<td>Utility Accounts / Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Billed Sales</td>
<td>Utility Accounts / Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Billed Projects</td>
<td>Utility Accounts / Active</td>
<td>$197.45</td>
<td>$197.45</td>
</tr>
<tr>
<td>Billed Rentals</td>
<td>Utility Accounts / Active</td>
<td>$-450.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Other Bills Pending</td>
<td>Utility Accounts / Active</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Undeposited Cash Sales</td>
<td>Utility Accounts / Active</td>
<td>$741.76</td>
<td>$746.76</td>
</tr>
<tr>
<td>Undeposited Cash Rentals</td>
<td>Utility Accounts / Active</td>
<td>$950.00</td>
<td>$950.00</td>
</tr>
<tr>
<td>Undeposited Pmt. Receipts</td>
<td>Utility Accounts / Active</td>
<td>$842.04</td>
<td>$842.04</td>
</tr>
</tbody>
</table>
TRANSLATING PATTERNS...

Account String - Account Strings are made up of segments

[ XXXX - XXXX - XXXX ]

Example Account String:

[ Fund - Department - Object ]

Codes - Segments are made up of one or more codes

- XXXX
- XX-XX
- XXXX

Parent

- 01 Widgets
- 02 Sprockets
- 03 Dohickey

The meaningfulness of a code can be completely different depending on the code from another segment. That is, you don’t know what the code means until you see it connected to another code in the GL/Transactions file. (This is rare and bad practice)

Similarly, sometimes a set of numbers are used as common codes across categories. For this we use suffixes.

Parent

- 01 Widgets
- 02 Sprockets
- 03 Dohickey

A segment can have multiple codes. If so, we use suffixes.

Parent

- 01 child
- 02 child

Each code is categorized by a hierarchy of classifications.

Within the context of a code, it may make sense for the hierarchy to have varying levels of depth or be flat.

Sometimes, codes are hierarchically connected.

But more often, codes in a segment will be unrelated. This could mean that the codes have no semantic relationship, or that it's just loosely defined.
...TO HIERARCHY
TOWARD A MORE MODERN APPROACH
THANK YOU!

Questions.

@morgankeys @stevepepple