Drawing Organization Charts Using VIVO
by Alex Rockwell
Introduction

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Purpose

• One of the goals of VIVO is to show which organizations faculty, staff, and students belong to.

• UF's academic structure is highly complex and does not correspond to its financial structure.

• UF does not have a facility to create organizational charts. Most organization charts are created by hand.
Original Uses

• Demonstrate how to work with VIVO's linked data

• Create org charts automatically for each institution

• Create poster sized drawings for marketing purposes
Program Design

Crawl → Serialize → Format → Text, Graphviz, Graph ML, JSON
Art vs Science

• More than 60% of my time on the project has been spent drawing graphs.

• Over 100 graphs have been created.

• Drawing graphs with 500+ nodes and including labels is extremely difficult.
Extends several feet in both directions

This first result was so bad I nearly scrapped the whole project...
Evolution
Evolution
Evolution
Immediate Impact

• The original picture generated substantial interest in the program.

• Showed that writing interesting 3rd party applications on the VIVO platform is possible.

• Many problems including missing, misplaced, and duplicated data have been uncovered by the crawler.
Finding all UF organizations

• Over 100 external organizations were added to VIVO during CV entry of the showcase departments.

• SPARQL cannot do recursive queries, so we did not have a tool to automatically find all sub-organizations of UF.

• Extended the ontology locally with a rootOrganization data property to mark organizations as children of UF.
Finding Data Problems

• Looking at graphs generated by the program has uncovered many problems in our data, including missing, misplaced, and duplicated records.

• We can understand the organizational structure much faster by looking at the graph rather than manually following the links from one organization to another.
Extending to People

• Plan to show the relationship between people and their affiliations with departments, centers and institutes.

• Need to import data to show the heads of departments.

• Finding the right representation will be challenging because UF's VVIO will include close to 30,000 people by the end of the grant.
Interactive Graph Demo

• Demo available at http://qa.vivo.ufl.edu/infovis/demo.html

• Created with JavaScript InfoVis Toolkit (http://thejit.org)
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Source code available at github.com/arockwell/vivo_org_chart