

## Lab 4: Customize a Report with Q&A

### Part 1: Add the Q&A visual

Navigate to the `Expenditure Lines` page and ensure that you are viewing the expenditure lines report for the County Capital Improvement Fund for FY 2019. Then, resize the treemap so that it takes up 1/3 of the vertical space, leaving 2/3 at the bottom.

Add a Q&A visual to fill the remaining area.

Type in "actual amount" and review the resulting card.

Use the Q&A visual to create a chart showing the actual amount for each cost center.

Extend this chart to review the actual amount by cost center, grouped by department.

**Which cost center is responsible for the largest expenditure in the County Capital Improvement Fund for FY 2019?**

- ☐ Crooked Creek Park
- ☐ Oak City Multi-Services Ctr
- ☐ Cary Regional Library - Parking Deck
- ☐ New Equipment 2019

### Part 2: Working with the Q&A visual

Change the visual to display the actual amount by cost center and department as a pie chart.

This is a terrible use for a pie chart, as we have far too many items to show cleanly. Instead, let's change the visual to a treemap.

Because the Q&A visual does not allow for proper drill-down on treemaps, this is not a good visual choice either. Let's try making this a table.

Create a new query which shows the number of expenditures per Monday by department and view it as a stacked area chart. Note that you will need to use "by date Monday" to display the weekly data.

**Which Monday had the greatest number of expenditures for the County Capital Improvement Fund in FY 2019?**  
Answer in the format yyyy-mm-dd.

### Part 3: Add synonyms for fields

Open the setup page for the Q&A visual and navigate to the tab for adding synonyms.

Add three synonyms: one for `Department` called "dept", one for `Actual Amount` called "expenses", and one for `Number of Expenditures` called "expenditure count".

Close the Q&A setup page. After the visual refreshes, change the Q&A question to show the "expenditure count" for Mondays, grouped by "dept" as a ribbon chart. Be sure to use the new synonyms for expenditure count and department.

Note that showing this data as a ribbon chart is a weird inversion of expectations: the dates are in the legend and departments are the flow elements! Instead of trying to fight with this visual, write a new query using "expenditure count" and "dept" to show the number of expenditures on Tuesdays for the Open Space department.

**What is the maximum number of expenditures on a Tuesday in FY 2019 for the Open Space department in the County Capital Improvement Fund?**

### Part 4: Teach Q&A new terms

On the **Expenditure Lines** report, open the setup page for the Q&A visual and navigate to the tab for teaching Q&A to understand new questions and terms.

Add the phrase "Costly expenses for firefighters" and submit that to Q&A. You'll define the unknown terms in the next steps.

Define "costly" expenses as actual amounts greater than \$50,000.

Define "firefighters" as belonging to the department known as Fire Services. Ensure that Q&A understands your definition--note that you may need to use the word "is" in your definition to make Q&A understand.

Save the terms and close the Q&A setup page. Then, go to the **Over Budget** report and drill through to the **Expenditure Lines** report for the Fire Tax District Fund.

Use the Q&A feature to find the average of costly expenses for firefighters by expenditure line item.

**What is the name of the expenditure line item with the lowest average actual amount for Fire Services in the FY 2019 Fire Tax District Fund given a minimum expenditure of \$50,000?**