Simple Node Query Designer

Rob Tucker
11/07/2018

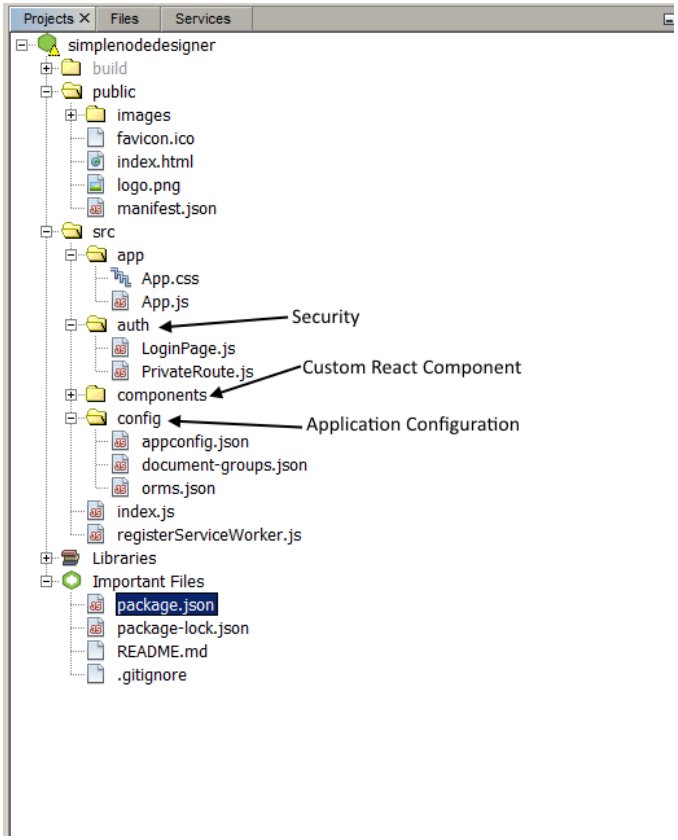
Contents

Introduction

The Query Designer is a React web application designed to work in concert with Simple Node ORM installations. The query designer allows authorized users to create re-runnable query documents that can return query results as JSON result sets or JSON object graphs. Once create, the query document are available via REST by document name.

Project Layout

The Query Designer is a node React project:



The project is available in github at:

https://rbtucker@github.com/rbtucker/simplenodedesigner.git

Application Configuration

Application configuration is handled in 3 files:

appconfig.json

```
{
    "textmsg": {
        "logintitletext": "Simple Node ORM",
        "modelselectdefault": "Select starting model...",
        "adddocument": "Add Document",
        "setupmenuname": "Setup",
        "filemenuname": "File",
        "newmenuname": "New",
```

```
        "newdocument": "New",
        "preferencesmenuname": "Preferences",
        "selectdata": "Select Data",
        "formatselections": "Column Settings",
        "definefilter": "Define Filter",
        "designreport": "Design Report",
        "runquery": "SQL/Results",
        "aggfunctionlabel": "Function:",
        "sortposlabel": "Sort Pos:",
        "ascdesclabel": "Desc:",
        "customcolinputlabel": "Custom:",
        "columnlabel": "Label:",
        "value": "Value:",
        "paramentrytitle": "Search Parameters",
        "savedocumenttitle": "Save Document",
        "authenticatorlabel": "Authenticator:",
        "resultformatlabel": "Result Format:",
        "validitycheckonly": "Validity Check Only",
        "distinct": "Distinct",
        "documentnamelabel": "Document Name:"
    },
    "defaultDesignAuthenticator": "DefaultAuthorizer"
}
```

name	description
textmsg	Configurable display text
`defaultDesignAuthenticator`	This is the authorizer to use for designer login authentication. The DefaultAuthorizer expect a basic auth string but does not validate the contents so access will be granted to everyone.

document-groups.json

This is the document group hierarchy used for loading/saving query documents that displays as a tree in the left pane of the main page.. The “key” entry must be unique. When a document is saved is will be associated with the selected group. On the ORM server the root path for document storage is set in the ORM configuration. Documents will be stored in folders by group key under this path.

```
{
    "title": "Queries",
    "key" : "grp0",
    "isLeaf": false,
    "children": [
        {
            "title": "General",
            "key" : "grp1",
            "isLeaf": false
        },
        {
            "title": "Financial",
            "key" : "grp2",
            "isLeaf": false,
            "children": [
                {
                    "title": "Accounting",
                    "key" : "grp3",
                    "isLeaf": false
                },
                {
                    "title": "Purchasing",
                    "key" : "grp4",
                    "isLeaf": false
                }
            ]
```

```
        },
        {
            "title": "Personnel",
            "key" : "grp5",
            "isLeaf": false
        }

    ]
}
```

orms.json

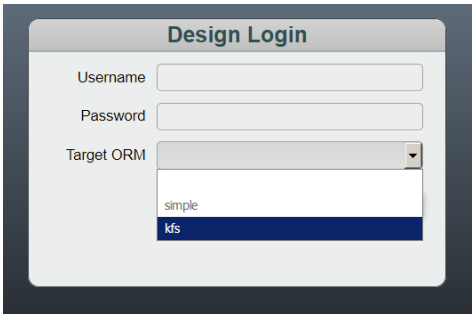
This Query Designer supports multiple ORM installations. The available ORMs are define as shown below. defaultUsername and defaultPassword are optional, if they exists they will auto-populate the associated login dialog fields.

```
[
{
    "name" : "simple",
    "url"  : "http://localhost:8888/orm"
},
{
    "name" : "kfs",
    "url"  : "http://localhost:8888/kfsorm",
    "defaultUsername" : "user",
    "defaultPassword" : "pass"
}
]
```

Creating a Query Document

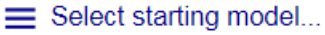
Login

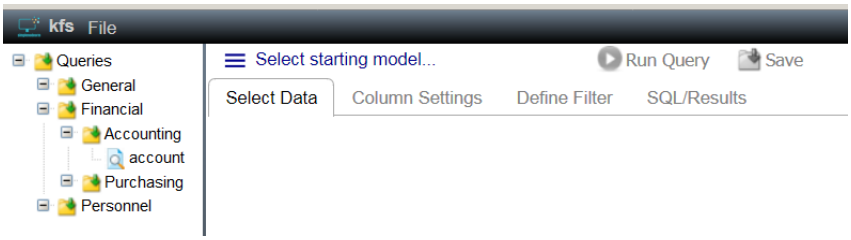
Pull up the application in the browser, select the desired ORM, enter Username and Password if required and click **Login.**

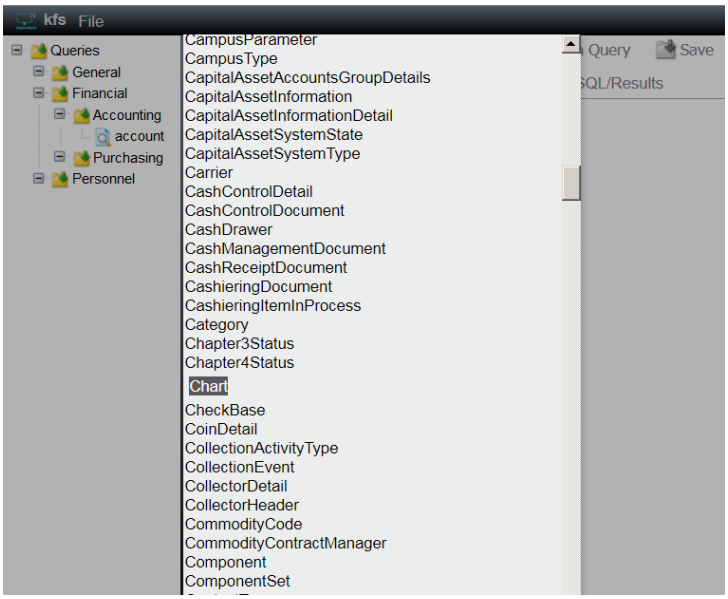


Select Starting Model

Click the menu button to display a list of available models:

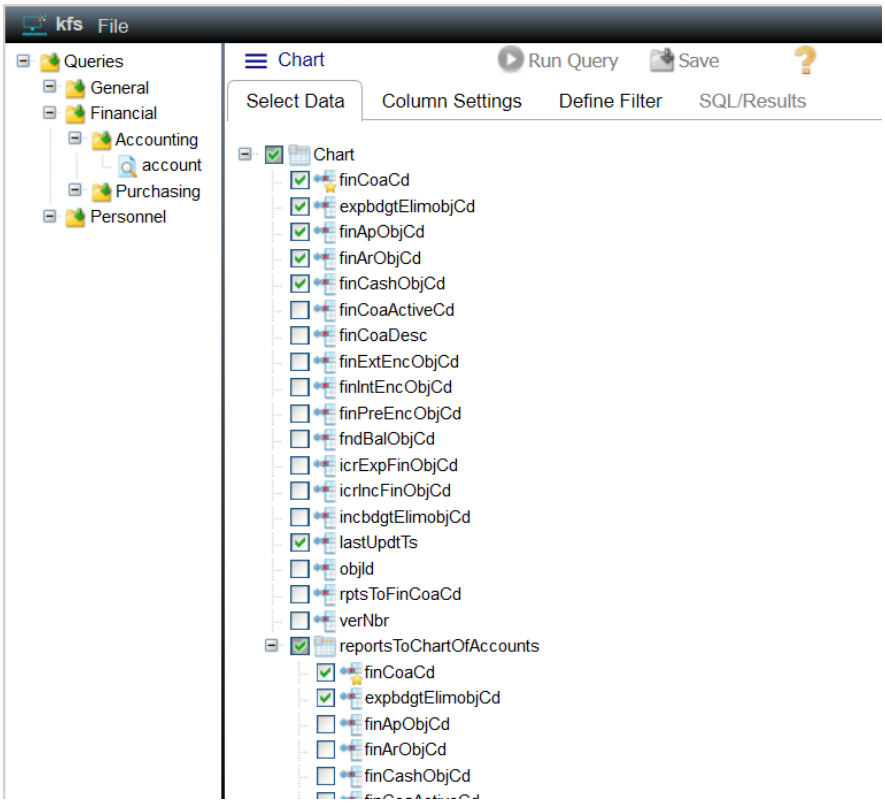






Select Desired Model Columns

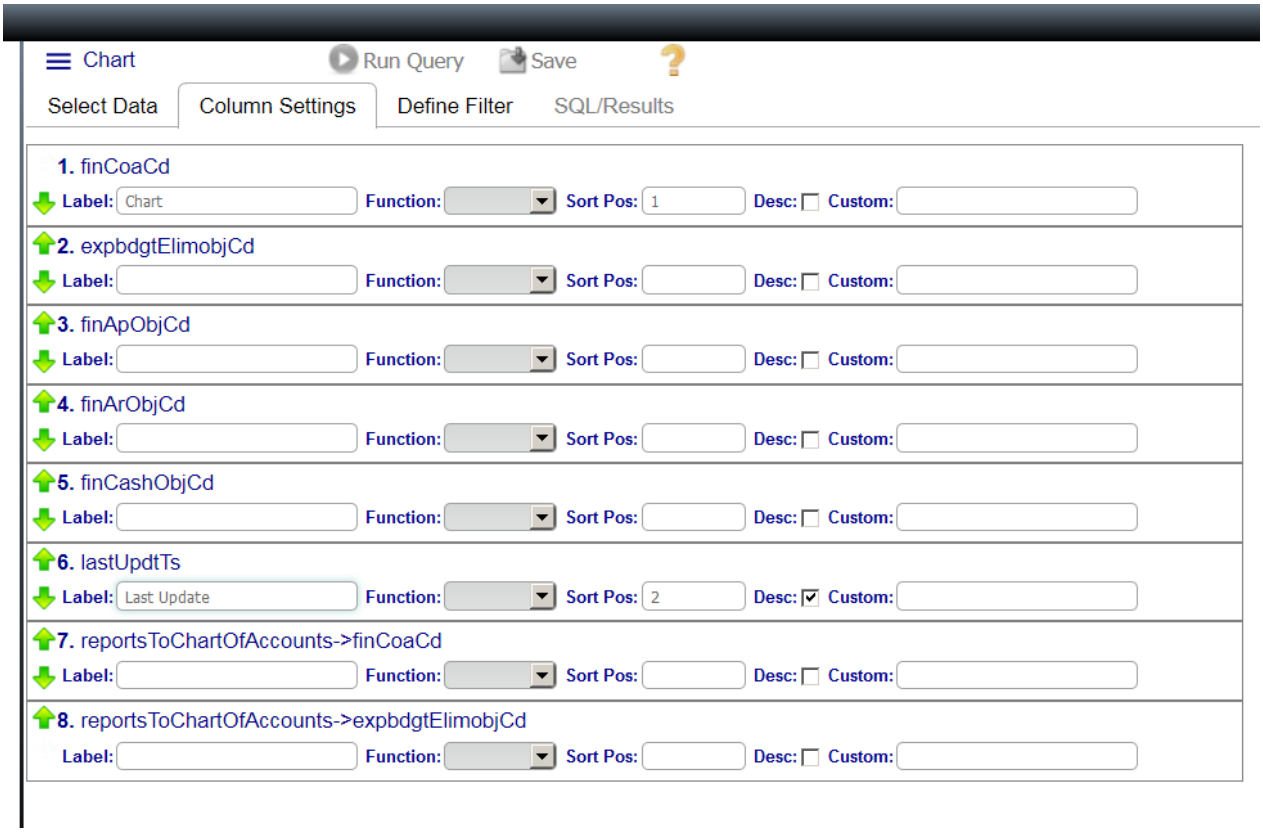
After the starting model is selected a model hierarch will be displayed – choose the desired columns you want. Starred columns are primary key columns



Column Setting

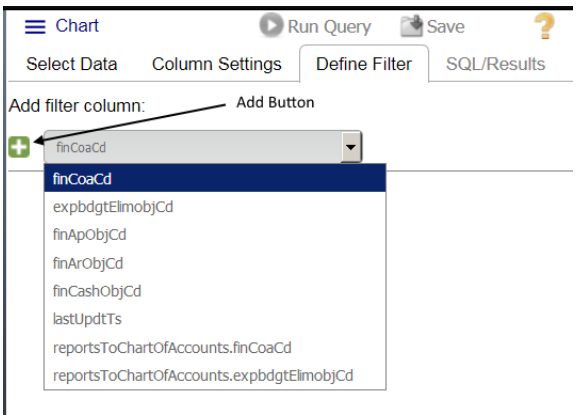
Customize the selected column settings as desired on the Column Settings tab. The **Label** field is used in the SQL select for the “as” column setting. Aggregate functions can be applied via the **Function** dropdown. If an aggregate function is applied the appropriate “group by” clause will be automatically generated. The **Custom** field allows the designer the flexibility to add any database specific select logic. If custom is populated it will be placed in the select statement as is. Entering a “?” in the custom entry will insert the current column name into that position .

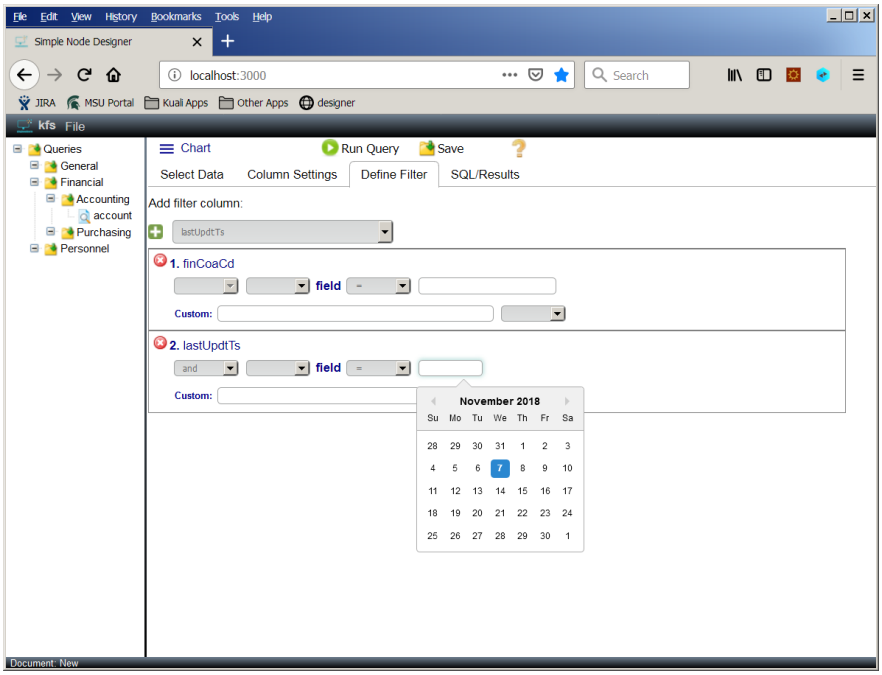
The green arrows allow you to change the select column order. If a result set is returned the columns will be in the order specified.



Define Filter

A where clause is required for all query documents. The **Define Filter** tab is where the designer builds the where clause. Where column entries will be selected from the column selections, so you must ensure that desired filter columns are selected in the column selection tree. To add a filter entry, select the desired column and click the add button:





Each filter line allows for selection of (where appropriate)

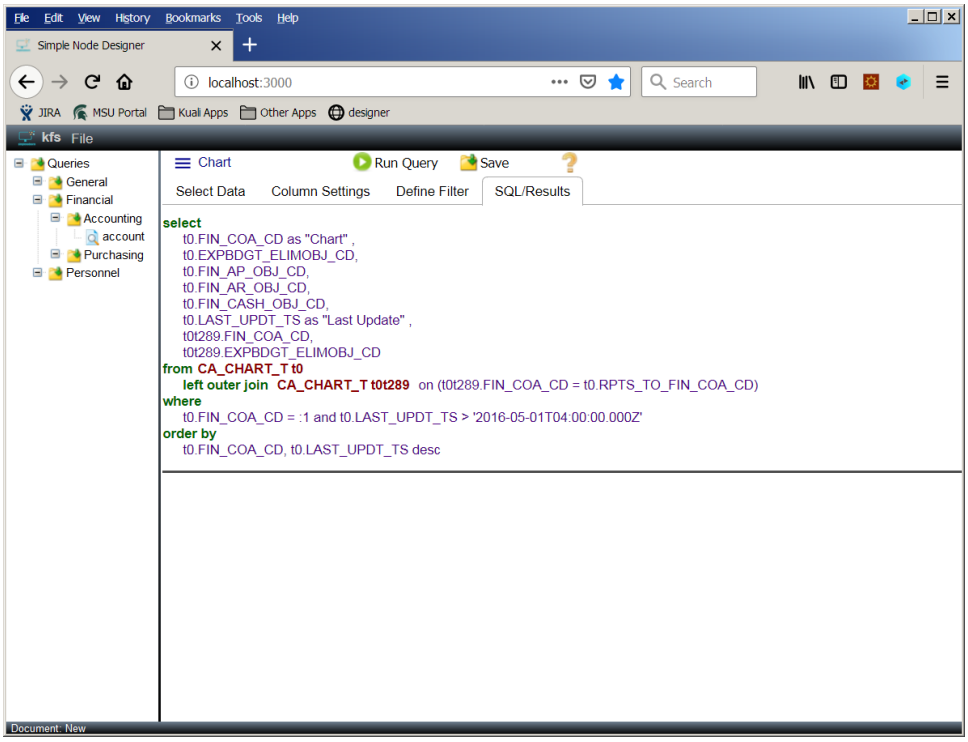
1. Logical operator (and/or)
2. Open parenthesis - (, ((, (((o ((((
3. Comparison operator (=, >, <, <=, >=, in, like, is null, is not null)
4. Comparison value entry
5. Close parenthesis -),)),))) or))))

If a comparison value field is left empty it is assumed that that field will be populated by a bind parameter when the document is run.

The **Custom** field allows for freeform entry of any where value. If this field is populated it is added to the where clause as is. Entering a “?” in the custom entry will insert the current column name into that position .

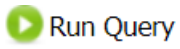
View Generated SQL

Once a filter has been defined the user can see the generated SQL in the SQL/Results tab:

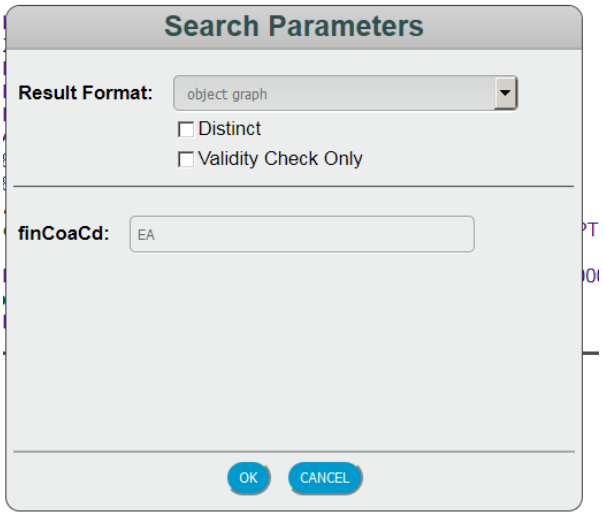


Running the Query

To run a query, click the **Run Query** button:



When run query is clicked, a parameter entry dialog will display. If any bind parameters are required they can be entered here:



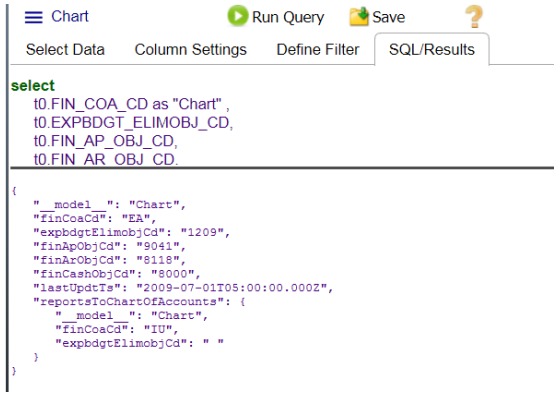
The parameter entry dialog also allows the user to enter other options:

1. Result Format – object graph or result set
2. Distinct – check to run distinct query

3. Validity Check Only – if checked, no results are generated just the validity of the generated sql is displayed.

Once the required entries are made, clicking Ok will run the query and results should display in bottom panel of split pane:

Object Graph Result:

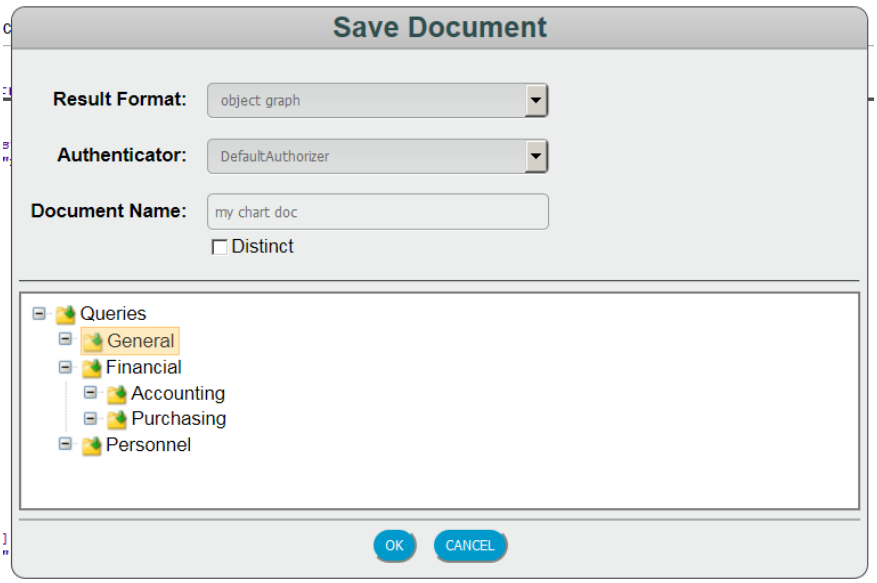


Result Set Result:

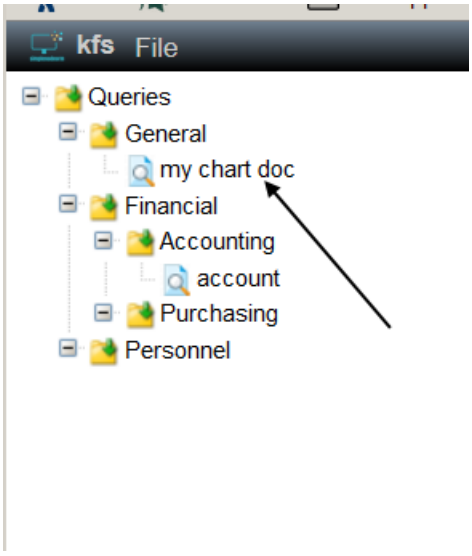
Saving the Query

Click the save button to **Save** the Query Document

When clicked, the save button will display the Save dialog:

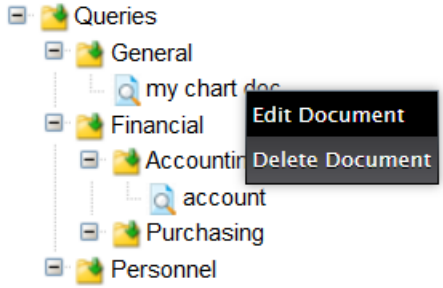


Complete the required entries and select the document group, then click **Ok** to save the document. You should see the saved document show up in the document tree in the left pane:



Editing and Deleting Existing Query Documents

To edit or delete an existing query document, right click on the desired document and select the desired menu option:


Queries
General
my chart doc
Financial
Accountir
account
Purchasing
Personnel
Edit Document
Delete Document