Tableau Metadata Project

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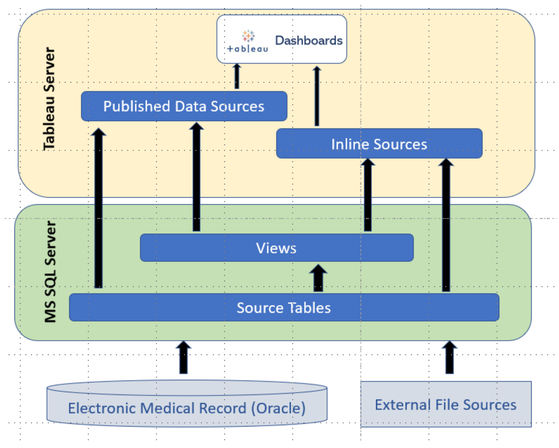
INTRODUCTION

- Stony Brook Medicine utilizes a suite hundreds of Tableau Dashboards for reporting of clinical and quality information based on data from data sources including the Oracle based electronic medical record.
- Majority of the data used to drive these dashboards is extracted from source systems and stored on a local MS SQL Server.



- Many data base objects(tables, views, columns) are created on the MS SQL Server layer.
- Artifacts documenting these objects are created manually and stored in Excel spreadsheets on a file share.
- Artifacts are time consuming to locate. Easy to overlook updating during modifications.

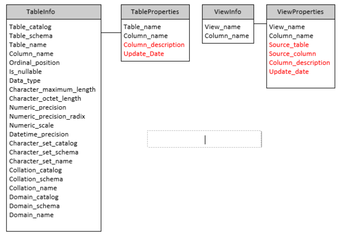
OBJECTIVES

- To provide an automated method of producing and maintaining artifacts documenting the data used in Tableau dashboards.
- Provide standardized documentation process and a central repository for objects across all dashboards.
- Use SQL Server metadata to source data elements needed to support Tableau dashboard development..
- Develop code/procedures to extract the needed data elements. Create a database framework to represent the data objects.
- Design dashboards to represent the data dictionaries and to depict object dependencies within views.

METHODS

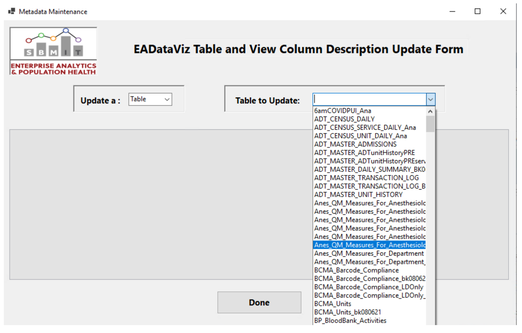
- SQL code written to extract table and view metadata from sys.tables and sys.columns.
- Determined that developers need the ability to document information about table columns and view columns.
- Working with Data Governance Committee determined best way to document information about table and view columns is to create a table structure to capture this information.
- Determined there are several key pieces of information that need to be manually entered.
  - .TableProperties Column_description
  - ViewProprties: Source_table, Source_column, Column_description

Table Structure



- All data for TableInfo, TableProperties, ViewInfo and ViewProperties table is captured from SQL metadata with the exception of the columns appearing in red above.
- The column _description in the TableProperties table represents the description of the data from a business standpoint. This information must be entered by the developer.
- Likewise, the source_table, source_column, and column_description on the ViewProperties table contains information that must be entered by the developer.

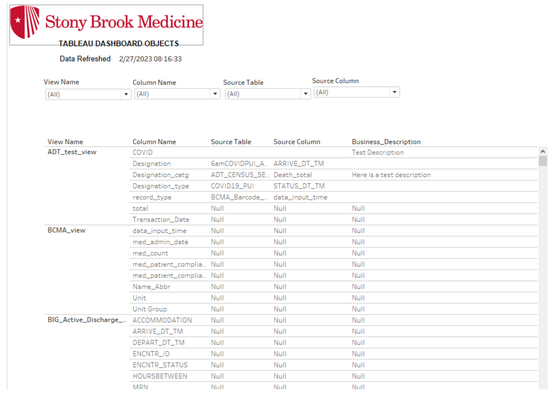
Visual Basic Form



- Form createdo aid developers in updating TableProperties an ViewProperties tables. Using SQL insert/update statements can be cumbersome and time consuming.
- Visual Basic was chosen as the platform for the form as it met with SBMIT's approved products. Also considered was Microsoft Forms/Power Automate, however SBMIT is not fully ready to support Microsoft Forms/Power Automate at the time of development.
- Visual Basic form allow the user to choose to update a View or a Table, which corresponds to making an entry in either the ViewProperties or TableProperties table.

RESULTS

- Created central repository of artifacts to represent data used on Tableau Dashboards.
- Eliminated need for spreadsheet-based data dictionaries.
- Form created to speed up initial documentation and maintenance.
- Developed centralized artifact documentation process
- Internal use dashboards created to enable visualizing MS SQL Server view and table information..



Stony Brook Medicine

TABLEAU DASHBOARD OBJECTS

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View Name	Column Name	Source Table	Source Column	Business_Description
ADT_test_view	COVID			Test Description
	Designation	SamCOVIDPUI_A...	ARRIVE_DT_TM	
	Designation_catg	ADT_CENSUS_SE...	Death_total	Here is a test description
	Designation_type	COVID19_PUI	STATUS_DT_TM	
	record_type	BCMA_Barcode_...	data_input_time	
	total	Null	Null	Null
	Transaction_Date	Null	Null	Null
BCMA_view	data_input_time	Null	Null	Null
	med_admin_date	Null	Null	Null
	med_count	Null	Null	Null
	med_patient_complia...	Null	Null	Null
	med_patient_complia...	Null	Null	Null
	Name_Abbr	Null	Null	Null
	Unit	Null	Null	Null
	Unit Group	Null	Null	Null
BIG_Active_Discharge_...	ACCOMMODATION	Null	Null	Null
	ARRIVE_DT_TM	Null	Null	Null
	DEPART_DT_TM	Null	Null	Null
	ENCNTR_ID	Null	Null	Null
	ENCNTR_STATUS	Null	Null	Null
	HOURSBETWEEN	Null	Null	Null
	MRN	Null	Null	Null

CONCLUSIONS

Utilizing metadata to drive artifact documentation can be used to centralize and streamline the documentation process.

Streamlining documentation saves developers time and provides better organization.

REFERENCES

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YouTube. (2020, December 5). Visual basic.NET programming. beginner lesson 1. hello Visual studio. YouTube. Retrieved March 20, 2023, from https://www.youtube.com/watch?v=Y8c1IHZs5qc