DB Startup Instructions for AI Gallery Tutorial – Model Management Using SQL Server

Prepare the DB

I used SQL Server 2017 and 2019 when building this tutorial – you should be able to use any version since 2016, which introduced running R code inside the DB. In order to run some of the SQL code, you will need to create a login for the SQLRUserGroup for your SQL Server instance. Instructions for doing this are found here: https://docs.microsoft.com/en-us/sql/advanced-analytics/security/create-a-login-for-sqlrusergroup?view=sql-server-2017

1. In SQL Server, use SQL Server Management Studio to create a DB named ModelMgmtDB
2. Use the Flat File Import wizard to create the table dbo.CustSmall from the included CustSmall.csv file (zipped)
3. Run createAccountHist.sql to create the table dbo.AccountHist
4. Run createCampResp.sql to create the table dbo.CampaignResponse
5. Run CreateModelTablesDDL.sql to create 4 separate model-related tables
6. Run create_view_ModelData.sql to create view `v_ModelData`
7. Run create_view_Models.sql to create view `v_Models`
8. Run create_view_ModelResults.sql to create view v_ModelResults
9. Run create_sp_insertModelDetails.sql to create stored procedure dbo.`sp_insertModelDetails`
10. Run create_sp_create_model.sql to create stored procedure dbo.sp_create_model
11. Run create_sp_bld_model.sql to create stored procedure `dbo.sp_bld_model`
12. Run create_sp_insertModelUsage.sql to create stored procedure `dbo.sp_insertModelUsage`
13. Run create_sp_insertModelPerf.sql to create stored procedure `dbo.sp_insertModelPerf`
14. Use the ODBC Data Source Administrator utility to create a System DSN named ModelMgmtDB that points to your new DB (ModelMgmtDB) using the SQL Server Native Client

Populate the DB

Prior to running your R scripts, be sure to install required packages. This can be done by using install.packages() within RGui (the instance of this program that is installed as part of MLS running inside SQL Server), run as administrator. Here is an example from my installation:

```
install.packages('caret',
        lib = "C:\\Program Files\\Microsoft SQL Server\\MSSQL14.MSSQL2017\\R_SERVICES\\library",
        dependencies = TRUE)
```

1. Run SS_Model_Bld_Save.R to populate model and details tables
2. Run SS_populate_Model_usage.R to populate the Model Usage table
3. Run SS_populate_Model_perf.R to populate the Model Performance table

Run the demo

1. Run SS_Demo_Script.R one step at a time to simulate system operation. These steps are executed:

    a. You can customize the demo with your own Model Name at the beginning of the script
    b. Build and test a model and save it to SQL Server
    c. Specify that the model was used by simulating a feed from a CRM system
    d. Specify the model performance by simulating a feed from a CRM system
    e. Repeat steps 2 and 3 with lower performance to trigger the building of a new model
    f. Repeat steps 2 and 3 with higher performance with no new model built
2. View the results of your work in the Power BI dashboard – MyModelMgmtDashboard.pbix