

Assigned on: Nov 9, 2023  
Due on: Nov 30, 2023

ISTM 637  
Fall 2023

Points: 75  
Joint Project

## Design and Implementation of a Data Warehouse for a Retail Store

### Report 4: BI Report Design and Implementation for DFF along with the Integrated Group Report

#### Overall Objective of this Project

The objective of this project is to design and develop a data warehouse for a retail store chain called Dominick's Fine Food (DFF) that has many branches. We use their store level data to set up the data warehouse and help them analyze the data.

#### Project Scenario

The data for this project includes store-level data covering shelf management and pricing from all the branches of DFF. The data can be accessed from the following web site:  
<http://gsbwww.uchicago.edu/kilts/research/db/dominicks/>.

#### Objective of this Report

The report focuses on the end user operations. The tasks include:

- Development of a set of BI reports (make sure that they are all decision-support reports – look at the five business questions, pivot tables/charts of report 1 and develop reports to support the questions) for the end users of DFF stores.
- Utilize these four tools – (a) **SQL Server Analysis Services (SSAS)**.; (b) **SQL Reporting Services (SSRS)**; and (c) one of these: **ReportBuilder 3.0/Power BI/Tableau**; and (d) **SSRS on top SSAS cube**.
- For your 5 BQs, you must implement SSAS alone, SSRS alone, ReportBuilder/Power BI/Tableau alone, and SSRS on top SSAS. All these tools must be implemented at least once.

#### Submission

- **Submit the final report. Make sure that Reports 1-4 are FULLY INTEGRATED to create this final report for the project based on the report format given below.**

#### Report Format

1. All reports (1 through 4) must be neatly integrated so that report looks like one AND NOT A COLLECTION OF FOUR DIFFERENT REPORTS. Clean up errors and rewrite portions that were marked as bad or unreadable.
2. Have sections AND do not use choppy writing style.
3. Sections **MUST** be as follows:

##### **Section 1. Introduction**

##### **Section 2. BQs and their substantiations and explanations** (from Report 1; have all BQs and point out which one you are implementing)

##### **Section 3. Independent Data Marts design using Kimball's approach (from Report 2)**

- Detail description of the steps followed to develop the “independent” data marts
- Create the schema (must use a diagramming tool and NOT PowerPoint)

##### **Section 4. Data Cleaning and Integration (from Report 3)**

- Discuss in detail the data quality issues in the DFF data sets (use PPT slide deck on data quality)
- ETL plan (from Report 3) and details of SQL scripts
- ETL implementation evidence with screenshots and descriptions
- Data Loading to the DW (discuss in detail what did you do to load the data)

- Show in detail the actual ETL to create a fact table (from Report 3)

**Section 5. BI reporting (use SSRS, SSAS and ReportBuilder 2012. This part is NEW.)**

- **Reporting plan:** (a) Determine all the target reports that satisfy the business questions and why; (b) Determine all the mappings from the independent data marts to the report attributes; (c) Describe all report templates; (d) You must use SSRS, SSAS, SSAS+SSRS and ReportBuilder/Power BI/Tableau in your reporting.
  - **Report Implementation**
    - a. Reports from Independent Data Marts using SSRS
    - b. Cubes from SSAS
    - c. Reports from Cubes using SSRS and SSAS
    - d. Reports using ReportBuilder/Power BI/Tableau
  - Make sure to add screenshots wherever they are needed to provide evidence that you have built the reports.
  - Report should be readable and understandable AND THEY MUST SUPPORT SOME BQ(S).
4. Finally, all of your BQs (the ones I asked you to work with) must be supported by your entire data warehousing infrastructure. **Support means that you need to provide charts and discussions for each BQ.**
5. NO SHARING INFORMATION WITH OTHER GROUPS. I AM CONSTANTLY CHECKING YOUR ACCESS LOGS AND OTHER THINGS TO MAKE SURE THAT EVERYONE IS DOING HIS OR HER WORK.

**Grading (Total points: 50)**

- Presentation style, English, clean structure of writing 10
- Quality of the content 60
  - SSAS alone 15
  - SSRS alone 15
  - SSAS and SSRS 15
  - Report Builder/Tableau/Power BI 15
- Quality of integration of Reports 1-4 5
- Make sure to tell where the DW, staging, reports, and analysis services, etc. are stored.
- Title page must have a title of the project, member names, group number and an email address in case it is needed.