INFO 6210   Final Team Project   Modified: 1/25/17

Background:

Data is recorded on student taking classes, course performance, absences and misbehavior. School administrator, teachers and parents are interested in various aspects (data subjects or perspectives) related to students. In this project we are interested in exploring the following data sets:

- a)   Student Academic Performance
- b)   Student Absences
- c)   Student Misbehavior & Discipline
- d)   Special Needs Programs

The database used is Schools_K12_DW (backup attached to assignment) which is a Data Warehouse already in a dimensional model. It contains primary keys & foreign keys indicating data relationships.

There will also be a flat file for each table in the SQL Server database.

Data Sources:

Table 1: List of Data Source Table with Rows Counts

TableName	row_count
dimAbsenceCode	23
dimAssignment	26
dimCourse	449
dimDate	12,663
dimDisciplineActionCode	36
dimDisciplineEventCode	87
dimEnrollmentCode	20
dimFacility	5
dimGradeType	13
dimHSGTDomain	18
dimPeriod	32
dimSpecialProgram	4
dimStaff	147
dimStandardizedTestDomain	28
dimStudent	3,481
dimSubject	19
dimWithdrawalCode	36
factAbsence	11,744
factDiscipline	1,872
factHSGTDomainScore	2,527
factHSGTScore	552
factSchoolKPI	5
factSpecialProgram	447
factStandardizedTestDomainScore	103,793
factStandardizedTestScore	18,164
factStudentCourse	16,944
factStudentCourseGrade	101,664
tempStaffSubject	36

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Deliverables:

For this database perform the following tasks:

1. Create a dimensional data model for the following data subsets of Schools K12 DW:
   a) Absences
   b) Discipline Behavior
   c) Academic Performance
   d) Special Programs
2. Create a description & list sample types of analysis/queries for each data subset from the following perspectives:
   o School Administrator
   o Teacher
   o Parent

   Tasks 1 & 2 - Due next week.

3. Create OLAP (SSAS) cube for each data model:
   e) Absences
   f) Discipline Behavior
   g) Academic Performance
   h) Special Programs

4. Write SQL queries for each of the sample queries above & present results

5. Use PowerBI using OLAP cubes & display results of above queries/analysis

6. Create two databases using the flat file, each a different DBMS, that recreates the Schools_K12_DW dimensional model & perform queries (#4) against each database. Select 2 of the following 3 dbms:
   o Oracle
   o MySQL
   o PostgreSQL

Formats:
- Data Models (PDF)
- OLAP cubes (abf files)
- Written document
- SQL query results in Excel
- PowerBI dashboards (PDFs)
- Class Presentation & Demo