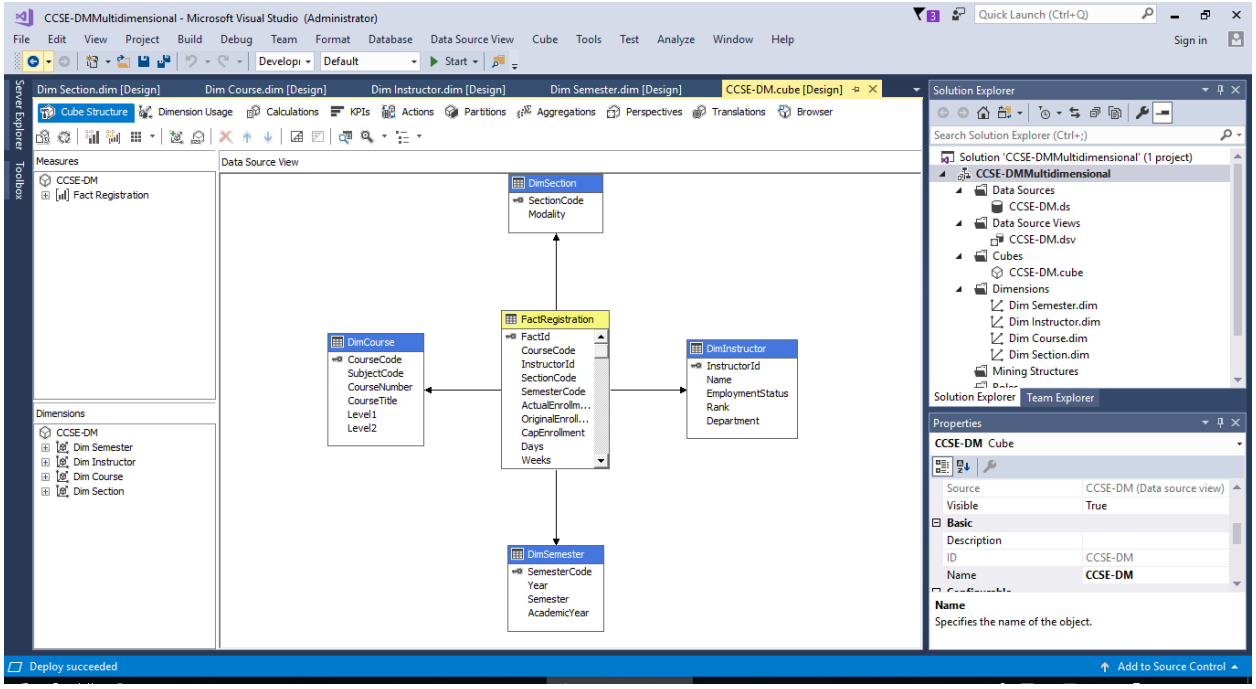
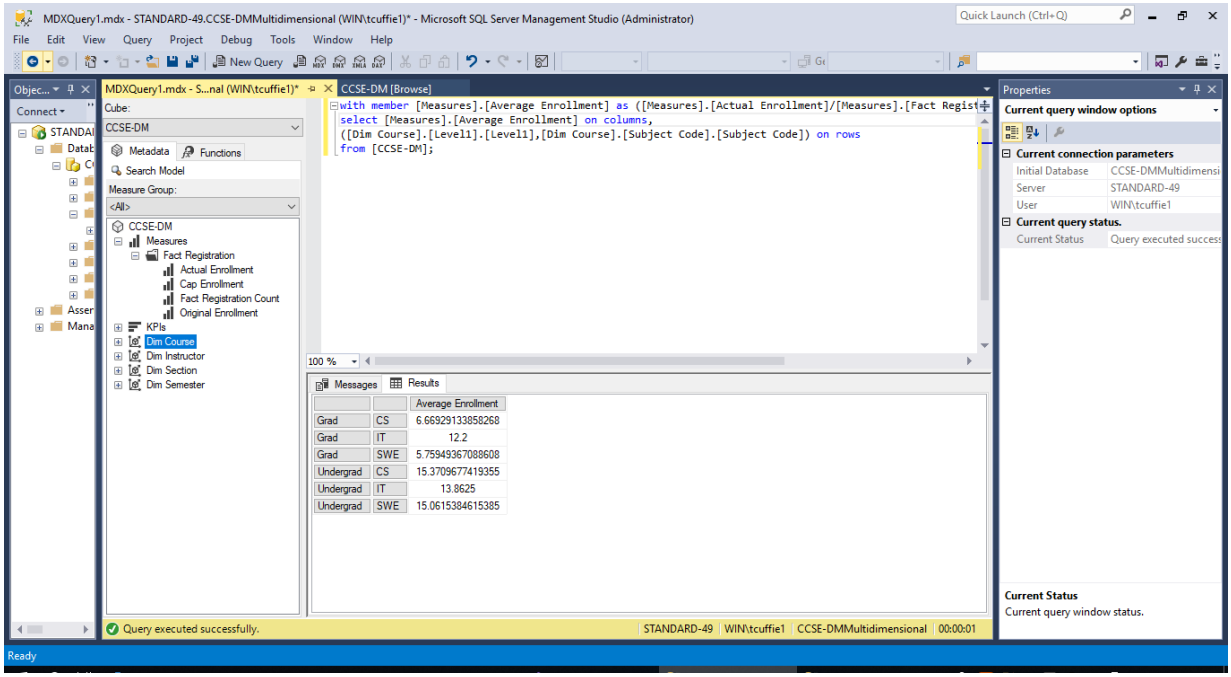
Example Screenshots of Work Within SQL Server, SSIS, Power BI and Excel
Link to Course Description: http://zheng.kennesaw.edu/teaching/it4713
Taylor Cuffie

SQL Server

Cube Design

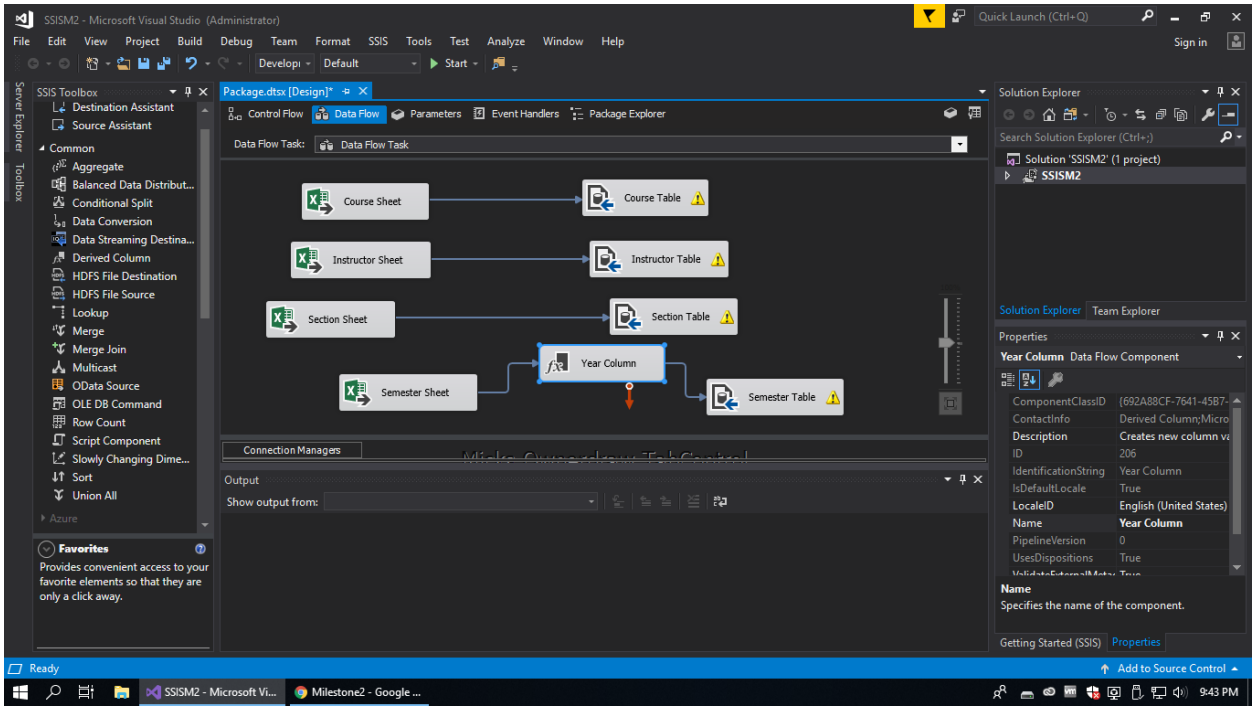


Data Query Example

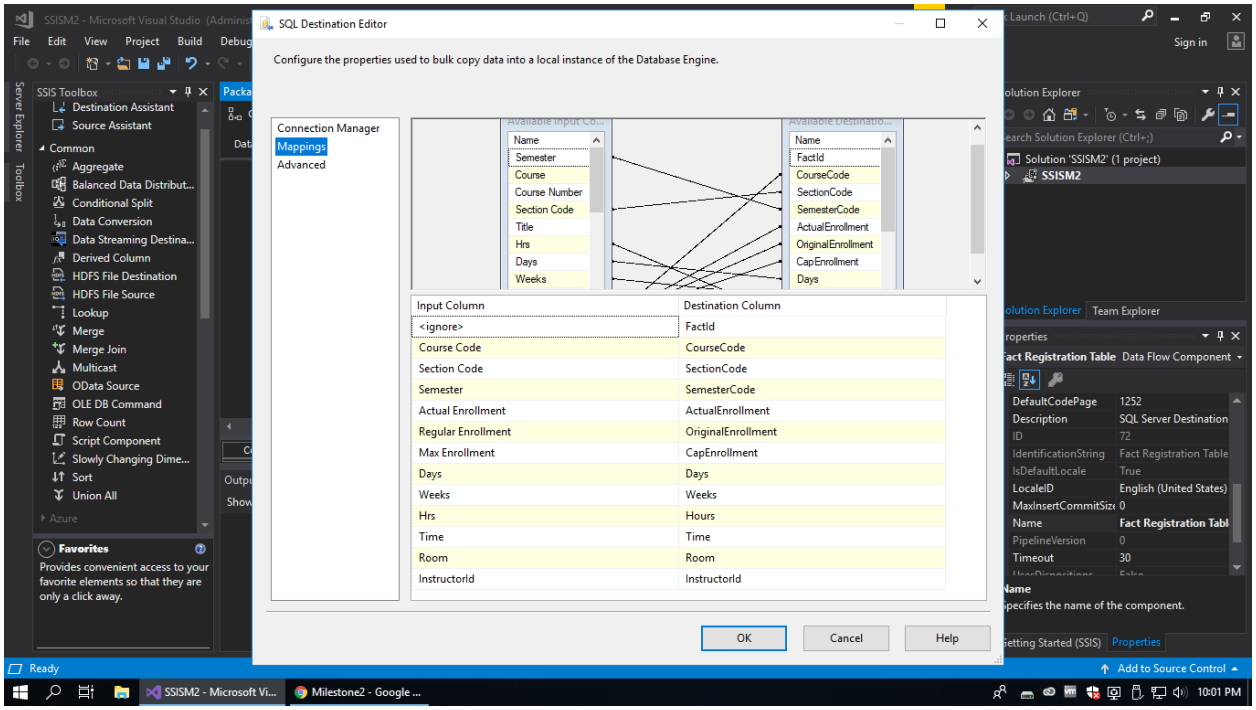


Microsoft SQL Server Integration Services

Data Flow

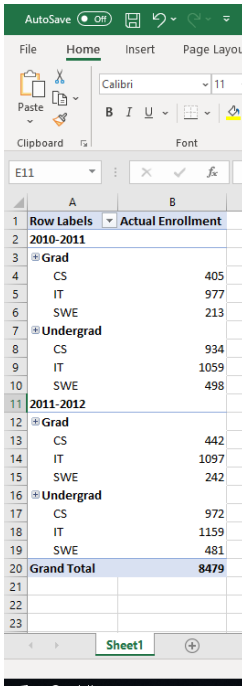


Destination Editor



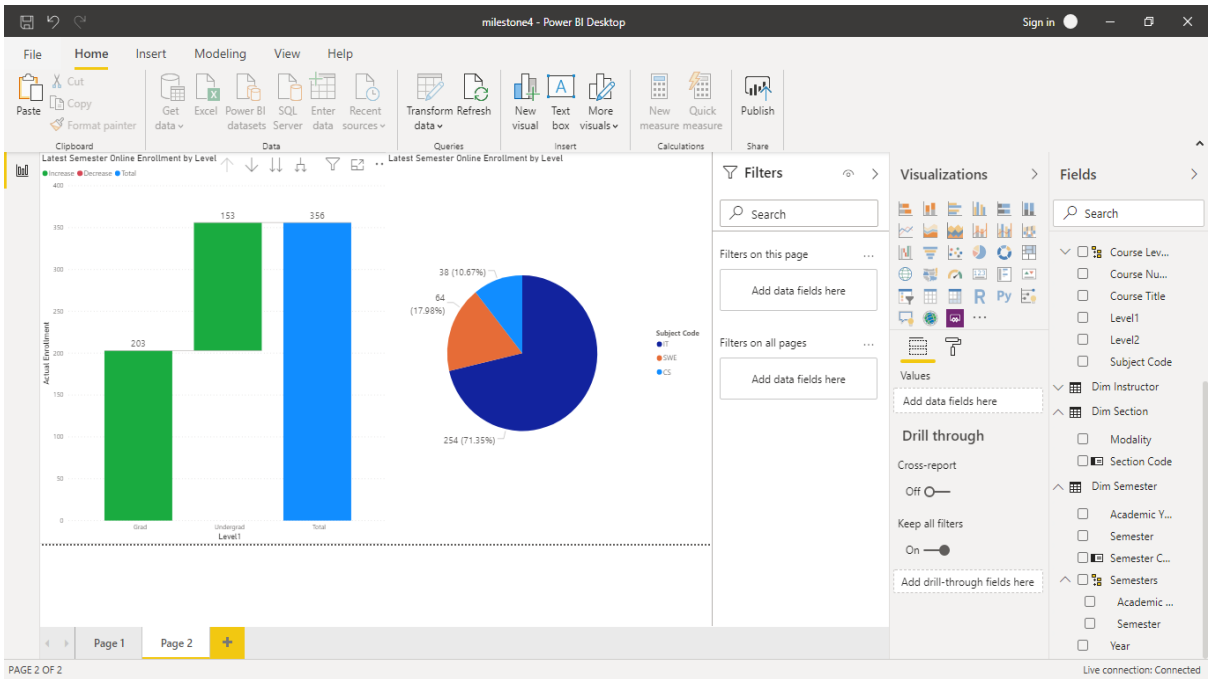
Excel and Power BI

Pivot Table Example



Row Labels	Actual Enrollment
2010-2011	
Grad	
CS	405
IT	977
SWE	213
Undergrad	
CS	934
IT	1059
SWE	498
2011-2012	
Grad	
CS	442
IT	1097
SWE	242
Undergrad	
CS	972
IT	1159
SWE	481
Grand Total	8479

Power BI Visual



Overview of Sample Data Set Organization

This organization is a university. Their goal is to utilize resources and faculty so that students can best be served. Understanding trends is important so that changes can be implemented before problems and arise and resources will not be overallocated to courses with low enrollment rates for example. Information such as withdrawal rates is important so that they can pinpoint problem areas with classrooms or faculty. For example, student retention may be

particularly high among certain professors or classrooms. If the organization is aware of particular attributes of professors or classrooms that students seem unlikely to withdraw from, they can use that information to gain insight on how they can improve other sections. Other uses for the data may include determining whether the workload of a specific professor is unusually high, or determining which building students are most likely to register for classes within.

The given data is a list of offered courses for different semesters. This data will be used to determine trends which can help to determine what courses may be offered in the future and understand the utilization of classrooms and faculty. The fundamental object within the sample data seems to be sections. The room numbers, instructors, and schedules between semesters can be distinct. Instructors, rooms, and schedules can be separate dimensions because these objects may be reused between different sections. Integer data types are used for IDs among the dimensions so that new instances of these dimensions can have incremented ID values.

Basic Data Analysis

Hierarchies

Year→ Season
Course → Section
Day→ Time
Campus → Building → Room

Potential Aggregates

Difference between Start and End Dates of Schedule table to find duration in weeks

Difference between enrollment values to find number withdrawn or difference between the max enrollment and the actual enrollment, or the number of seats in a classroom. This data can be used to determine whether the number of sections of a course should be increased or decreased, or if the classroom of a specific section is too large or small.

The InstructorID column for different sections can be joined to determine the number of sections that a professor is instructing for a given semester.