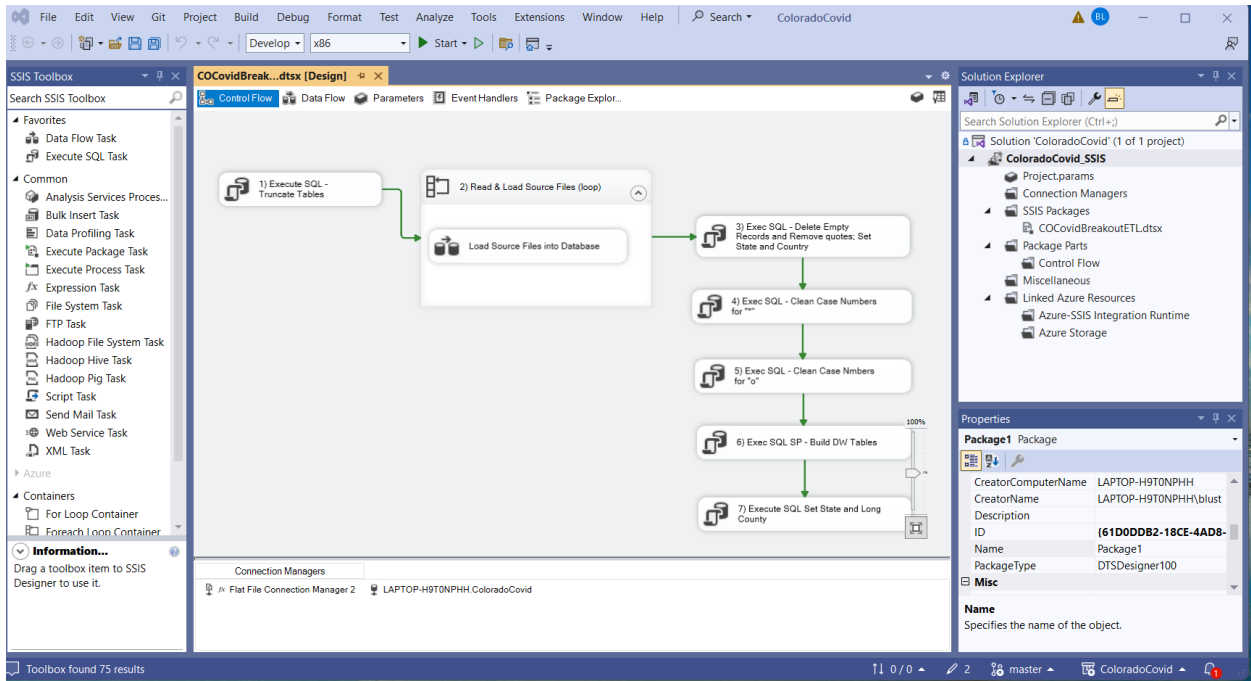


**B Robert Carmel**  
**Course: Building a Database Warehouse Data Pipeline**  
**Using SQL Server, SSIS and Transact SQL**  
**Introduction and Course Outline**



## Introduction

The Building a Database Warehouse Data Pipeline course includes 10 lessons where students will create a real-world database warehouse data pipeline using the Microsoft technology stack.

Students should have a good understanding and working knowledge of SQL Server database and SQL programming prior to taking this course.

The cost of this 10-lesson course is \$1,295. Students may be eligible for a 20% discount.

I will be working closely with students during the entire lesson to ensure that they understand the material and complete the lesson's hands-on training.

This is an intermediate data engineering course that provides students with the opportunity to build a real-world database warehouse Extract, Transfer and Load (ETL) pipeline using the Microsoft technology stack.

Students will learn how to transform text files downloaded from the Colorado Health Department into a dimensionally modeled database warehouse using Microsoft Visual Studio, SQL Server and SQL Server Integration Services (SSIS) and Transact SQL (T-SQL or SQL).

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This course's lessons will include:

- Review and analysis of the course's case study project, Colorado Health Department Covid Cases.
- Review and analysis of the case study's source data sets from the Colorado Health Department.
- Installing the SQL Server Management Studio (SSMS) database development environment using the Windows platform.
- Installing the Microsoft Visual Studio development environment.
- Loading the database warehouse schema.
- Building the SSIS project and the data pipeline ETL actions using Visual Studio, SSMS, SSIS & TSQL.
- Reviewing the SQL Server stored procedure used in the SSIS pipeline.
- Executing the SSIS data pipeline project and loading the database warehouse.

## About Instructor B Robert Carmel

I have more than 25 years of experience as a senior software and data engineer, solutions architect and technical trainer. I worked for several multi-national Fortune 500 companies in the USA:

<b>Company</b>	<b>Industry</b>	<b>Position(s)</b>
Texaco Inc.	Oil & Gas	Programmer Analyst
Lockheed Inc	Aerospace	Senior Analyst
Price Waterhouse Coopers	Management Consulting	Senior Information Systems Consultant
Roche Inc.	Pharmaceuticals	Senior Systems Consultant
Boulder County Mental Health Dept.	Government	Lead Programmer, Technical Trainer
Century Link Inc	Telecommunications	Lead Programmer Analyst
Wipro Inc	IT Consulting	Senior Solutions Architect, Technical Trainer

I am an excellent teacher and mentor. I have the patience and dedication to support new students who take on difficult challenges.

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## **Lesson 1: Colorado Health Department Covid Cases Project Description**

In Lesson 1, we will do an in-depth review of the Colorado Health department Covid project and data pipeline requirements including:

1. Background on the Covid cases tracking system and source data.
2. Key business requirements for the data warehouse and pipeline.
3. Detailed analysis of the system's source data sets (.txt files) from the Colorado Health Department.
4. Extracting the source data sets to the student's local drive.

## **Lesson 2: Installing the SQL Server Database Development Platform**

In Lesson 2, SQL Server and the SQL Server Management Studio (SSMS) will be downloaded and installed on the student's Windows computer.

## **Lesson 3: Installing the Microsoft Visual Studio Development Platform**

In Lesson 3, students will download the latest version of the Microsoft Visual Studio Development Platform. Students will review the major features of Visual Studio.

## **Lessons 4 & 5: Loading the Case Study Database Schemas: Tables & Indexes**

In lessons 4 & 5, students will

1. Learn how to design the database from the source data using dimensional modeling protocol for an OLAP database warehouse.
2. Create the course's case-study SQL Server database warehouse using SSMS.
3. Load the course's database from an external backup file that has been provided to them.
4. Become familiar with the database warehouse schemas and the data.

## **Lessons 6, 7, 8 & 9: Creating the SSIS Project and Building the ETL Data Pipeline**

In Lessons 6 through 9, students will build (re-engineer) the SSIS data pipeline for the course's case-study project. The SSIS - ETL process will extract source data from the Colorado Health Department's data files, perform required

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transformations to the source data, and then load the data into the SQL Server database warehouse.

1. Reviewing the course's case-study SSIS data integration project for the Colorado Covid database warehouse.
2. Creating the SSIS integration project.
3. Creating the connection managers for the source data and database warehouse.
4. Implementing the control and data flow SSIS tools used for the ETL pipeline.
5. Coding the SSIS data pipeline tools with T-SQL to clean (transform) the source data.
6. Reviewing the SQL Server database stored procedure that is used to create the database warehouse.

## **Lesson 10: Executing and Analyzing the SSIS Project**

In Lesson 10, students will execute and debug the SSIS project that now contains the complete ETL data pipeline from the course. Students will learn how to use the Visual Studio application to debug and analyze SSIS integration projects.

Students will execute and analyze the output generated from the SSIS project's tasks and code. Any program errors will be identified and fixed.