

# Data Warehousing

CS-452

Spring 2023

## Course Project

**Due Date:** Second Last Week (on Monday) of the Semester

The goal is to build a data warehouse and analyze it using OLAP. This project will be the basis for the presentation in the final week of the semester. Each group should have about 5 members.

The project should be documented in a (group) report of approximately 20 pages. You may include relevant figures, screenshots, descriptions, and discussions into the report.

## Installation of Data Warehousing Software

### 1. Installation of Microsoft SQL Server

Download [SQL Server 2022 \(Express Edition\)](#) and start the installation program. During the installation process, make sure that you install the following services:

#### Required:

- Database Services,
- Analysis Services,
- Integration Services,
- Reporting Services
- and Workstation Components.

#### Optional:

- Books online,
- and development tools (Management tools).

**Note:** Windows machine must have IIS installed and enabled.

### 2. Installation of Microsoft Visual Studio Community 2022

Download [Visual Studio Community 2022](#) and start the installation program.

### 3. Installation of Microsoft SQL Server Management Studio with Azure Data Studio

Download [SQL Server Management Studio 19.0.2](#) and start the installation program.

### 4. Installation of Microsoft SQL Server Integration Services Projects 2022

Download [SQL Server Integration Services Projects 2022](#) and start the installation program. (Go to MS Visual Studio, Click Extension Tab -> Manage Extension -> Search for Integration Services to install).

### 5. Installation of Microsoft Analysis Services Projects 2022

Download [Microsoft Analysis Services Projects 2022](#) and start the installation program. (Go to MS Visual Studio, Click Extension Tab -> Manage Extension -> Search for Analysis Services to install).

## After installing the Applications

Perform the following checks:

1. Open “Component Services” and check whether all four services above have been started.
2. Open “SQL Server Management Studio” and see whether you can connect to “Database Engine”.

### Use the following Data Source

North Wind data set (from your Course of Introduction to Database Systems)

**Note:** Make sure to understand all attributes of each table. Also make sure SQL Server is working, import dB and execute few SQL queries for verification.

## Project Description

Below you will find a description of the parts of the project related to the topics covered.

1. Business Process(es) and Data Sources.
2. Dimensional Data Modeling.
3. Building Cubes.
4. Extract Transform Load (ETL).
5. OLAP Front End Tools.
6. DW performance optimization

## Presentation

Prepare and submit your Presentation according to the following point

1. Definition, and explanation of scenario.
2. Example Computed.
3. SQL Script with comments.
4. At least 12 queries.
5. Conclusion.
6. References (List the websites which you read to prepare pptx and implementation of packages using different services. For citation use ACM citation method where required).

### Note:

Upload both pptx, scripts, packages and dataset files or any supporting files.