Final Assignment: Group Project

Assignment 08, Assignment 09, and Assignment 10 is a group project worth 300 points. You must complete the final project to pass the course. The goal of the final is to demonstrate in a team setting you can:

Recommend platform: Power BI

* Work with an assigned dataset and chose another dataset to report on:
  + The assigned dataset is Bing Covid19 dataset: <https://github.com/microsoft/Bing-COVID-19-Data> (You can use the class dataset on our servers)
    - You cannot download this dataset from GitHub anymore. You will need download it from Azure. Which is here: [Bing COVID-19 - Azure Open Datasets | Microsoft Learn](https://learn.microsoft.com/en-us/azure/open-datasets/dataset-bing-covid-19?tabs=azure-storage).
    - We then need to scroll down to the .csv file located toward the bottom of the page: CSV: <https://pandemicdatalake.blob.core.windows.net/public/curated/covid-19/bing_covid-19_data/latest/bing_covid-19_data.csv>
    - When I downloaded the dataset it was: 560 mb
  + Chose an additional dataset from a website:
    - I used a dataset for Unemployment (professor’s example) <https://oui.doleta.gov/unemploy/claims.asp> then joined the dataset on State and Unemployment File Date. You should do something similar.
    - To upload the data to SQL Server I used the method we will demonstrate in class. I like to use the SQL Server interface on my local instance. Then backup the database as a ‘Export Data-tier Application’. This will create a .bacpac. Then all we do is ‘Import Data-tier Application’ . These settings are under Task.

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Required Secondary Datasets

Last year we had a group struggle for weeks to find a secondary dataset. This is a data management course, not a business class.

Therefore, if you don’t pick a dataset and clearly explain your testing on it. You will be assigned a dataset below. An easier approach it to pick one from the Azure Open datasets.

[Example Jupyter notebooks using NOAA data - Azure Open Datasets | Microsoft Learn](https://learn.microsoft.com/en-us/azure/open-datasets/samples)

* Build a data warehouse in SQL Server:
  + Build a database on your local instance.
  + Export / Import that database to Azure SQL Server
  + Properly backup the databases and put in a folder
* Build a Data Visualization with data:
  + Build one dashboard.
  + Build two different reports using multiple data visualizations.
  + Demonstrate additional ways to manage the data using data management & maintenance techniques we discussed.
* Explain how the data could be refreshed in a production environment:
  + The requirement here is just how you would refresh the dataset. The Big Data Technologies course build more on this principle if you chose to enroll.
* Present your finding to the class:
  + Each team will have 30 minutes to present their findings.
  + Presentations will be Week 9 and Week 10
  + You must turn all parts of the assignment on time in canvas

This activity will take you about 10 to 15 hours, so plan accordingly!

**milestone 1: Confirm team**

# 25 points: Contact your team: Due by aPRIL 16, 2024

The recommended way to contact your team is to use Canvas and Zoom. However, if you would like to use a different portal like Slack, please feel free.

The requirement for the course is to message both instructors through Canvas with all your team members. A simple message will be sufficient. Below is a sample.

**Sample (with all Team Members on the message)**

*Hi Tim & Mary,*

*This is Team Black (your group color will go here). I am contacting you today that all team members have met virtually, and we look forward to presenting the first deliverable to you on April 29, 2021.*

*Thanks, Team Black (your Team Color)*

Note: If you are having an issue contacting a teammate and they are not responding please message Tim and he will reassign you a new teammate.

**milestone 2: Secondary dataset**

# 50 points: Due by aPRIL 30, 2024

**Step 1**: Create an excel document or just use mine. If you can think of a better way of providing the details. Please feel free.

**Step 2:** Find a secondary dataset. All students will need a DimDate table. At this point you have taken two ETL Courses. I am not going to explain why you need one, but you will have several examples in class on how to build one in DAX and SQL.

**Step 3:** Assign your teammates roles (optional). I know this can be difficult and if you are having an issue, please feel free to reach out to the teacher. I suggest the individual who sent the email will make an excellent project manager. Perhaps let this person assign the roles.

**Step 4**: After you complete the form, please use the following format to submit to canvas. Each Team Member must submit it as follows in the following folder structure:

|  |
| --- |
|  |

Graphical user interface, application

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# Milestone 3: assignement 08 - turn into module 7

# 100 points: create a data warehouse: due May 18, 2022

**Step 1**: Create a data warehouse with your tables. My example below includes a State table. I added this additional table because I would like to slice the data by USA State OR Country Region.

**Step 2:** Create a local instance of your database. You should create the views or store procedures outside of the database. When I tested an ‘Export Data-tier Application’ it threw an error for the views or store procedures. To resolve this error, I deleted the views on my local instance and then rebuilt them on Azure. By now you should realize dropping a view or store procedure takes seconds and rebuilding a view or store procedures is seconds. Therefore, this should not cause issue or add much additional time.

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**Step 3:** Backup your database as an ‘Export Data-tier Application’ and put it in a folder named backup. As you can see below, I renamed my database with my team color and name other than COVID. For instance, my additional dataset is Unemployment. You should rename it something similar depending on the topic you chose.

**Step 4:** Now you should move the ‘Export Data-tier Application’ by doing a ‘Import Data-tier Application’ on Azure. It is basically the same thing. Remember you will have to delete your views and rebuild them on Azure.

**Step 5:** Create a Visio Diagram outlining your project. Below is mine and there is a sample in the folder

A diagram of a data flow

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**Step 6:** Each team member must turn in the Deliverable 2 in the Final Folder

**Step 7:** Screenshot your database on Azure. I provided a sample

**Step 8:** Include your views and store procedures that you will hook up to Data Visualizations

**Step 9:** Create a folder and subfolder structure screenshot below

**A screenshot of a computer

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**Step 10:** Fill up the subfolders using the deliverable I provided

**Step 11:** Each team member must turn in the deliverable

# 100 points: Milestone 4: turn into module 10 - create a data visulation with your project color and name: due June 08 2023

Step 1: Pick a Visualization Tool we worked with during the course. You can pick Power BI (recommended), Tableau or Jupyter Notebook.

Step 2: Import the dataset into that visualization tool and create:

* One Dashboard
  + Overall Report: Main Report High Level
    - One visualization that include DAX, Tableau Language, SQL or Python code for measures.
  + Drill Through Report: Viewing Details (For instance I used states)
    - One visualization that include DAX, Tableau Language, SQL or Python code for measures.
  + Administration Report: Something that counts rows
    - One visualization that include DAX, Tableau Language, SQL or Python code for measures.

# Example of Milestone 4

Please refer to your homework. You will notice we did something similar for the Power BI Homework in this course. This will be an excellent template for those of you needing ideas of what the final product should look like.

**Overall Report**

Homework 7 we looked at Worldwide data. Both datasets were plotted by the pandemic years. You do not have to show this much detail. However, this should be a good template for how your main report could look like

Chart

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**Drill Through Report**

Homework 7 we also looked at a drill through option in Power BI. We created a report and then chose to hide the report. That way when we published the report users could not select the drill through report page. This is an advanced option of Power BI and you do not need something this advanced.

Graphical user interface, application, table

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**Additional Report: Top 5 (optional)**

We looked at several other reports that showed different metrics. Perhaps you will recall from HW4. We looked at several pie charts. Perhaps this could be an additional option to show more detail about your datasets.

Graphical user interface, application

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**Administration Report**

The adminstration report is from HW1. This would help you discover and varainces in your report.

Graphical user interface, application

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Step 3: Write a presentation paper to present to the class. Please check the schedule to see when your team presents.

Create a Word/PowerPoint/Google Doc document that ***outlines how you:***

1. Selected your topic.
2. Assigned you roles to teammates.
3. Built your database on your local instance and Class Server.
4. Designed your Visualization Tool.
5. Choose your reports.
6. Answered your business question.

Step 4: Practice your presentation. Each team will be given 30 minutes class time to present their findings. However, if you are short of the thirty minutes that is okay.

Step 5: Turn in your Final. Each team member is expected to turn in their final no later than June 04, 2024 by midnight.

# Example of module 4: Power Point presentation

Below is an example of a student from last year’s presentation. This is how your presentation should look.

Home Page

Diagram

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Metric Page

# Graphical user interface, application Description automatically generated

By State Page

# Graphical user interface, application Description automatically generated

By State Page

Graphical user interface, application, Word, website

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# Admin Page

# Graphical user interface Description automatically generated with low confidence

# Information Page

# Table Description automatically generated