DS684
Cloud Computing
Week 06

Regarding Labs and Assignments

- Class participation means more than Zoom attendance. You must actively participate in the discussion and labs, and answer questions.

- Must hit Submit button, otherwise no grade
- If you need extension in time, must send written request (***email***). Otherwise no grade and no makeup. Requests sent over Zoom chat do not count.
- For any technical difficulty (installation, Azure access, etc), you must send written explanation (***email***) before the deadline. Otherwise no grade and no makeup.

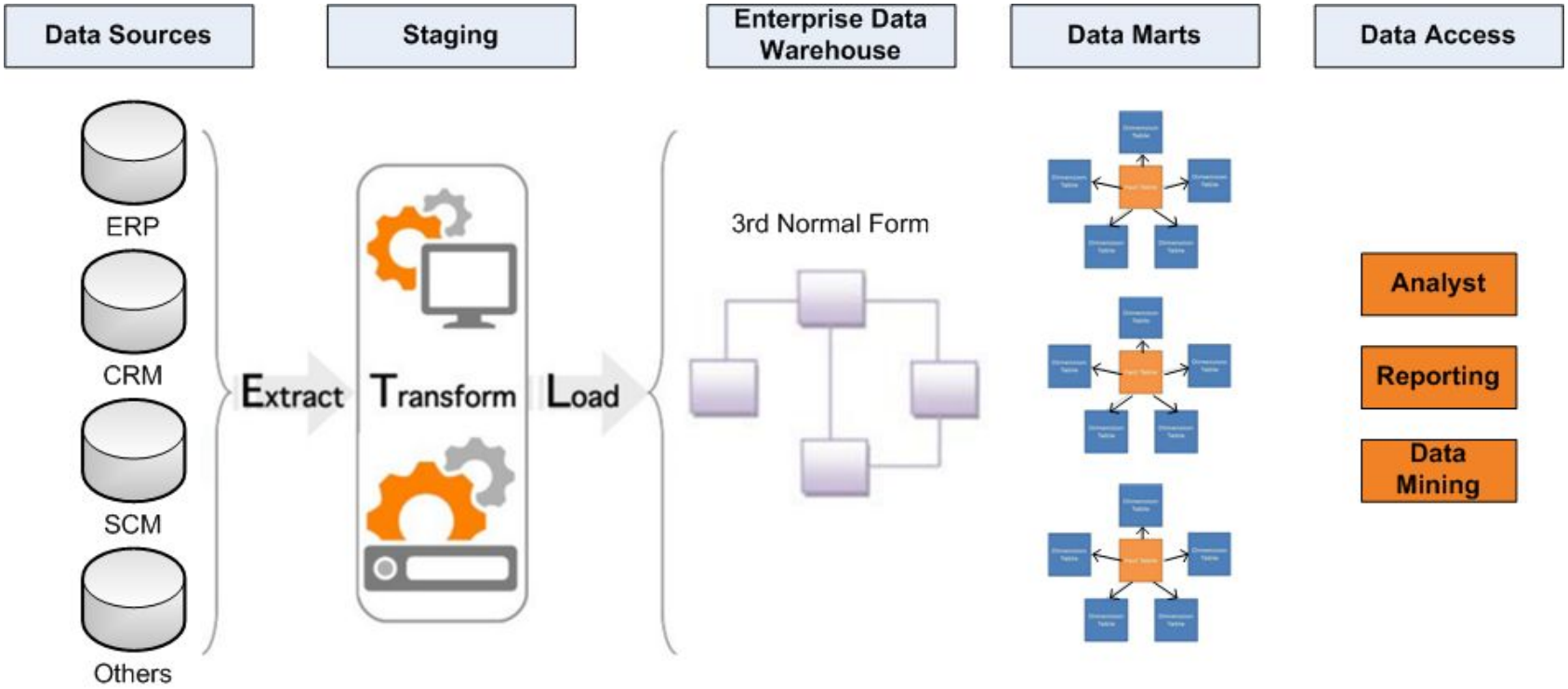
Agenda

- Review of previous weeks
- Introducing the final project
- Lab: Check Synapse Analytics access
- Midterm

What Have We Learned?

- Intro to Cloud Computing
- Intro to Azure
  - Resource management
  - User management
- Virtual machine and general compute
  - Networking
- Storage
- Relational databases
- Big data technology
  - NoSQL databases
  - Hadoop and Spark

Typical Enterprise Data Flow



Schedule for 2nd Half

Week 6: Final project and Mid term

Week 7: Azure Synapse Analytics Part I: Data Warehouse

Week 8: Azure Synapse Analytics Part II: Data Engineering

Week 9: Visualization using Power BI

Week 10: Azure Machine Learning

Week 11: Final project presentation

Agenda

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Final Project

Data analysis

- Build data lakehouse: Create data model. Implement data lake.
- Build pipeline to load raw files into a Synapse lakehouse
- Build Power BI presentation based on the Synapse lakehouse

Final Project and Teaching Schedule

Week 6: Final project and Mid term

Week 7: Azure Synapse Analytics Part I: Data Warehouse

Week 8: Azure Synapse Analytics Part II: Data Engineering

Week 9: Visualization using Power BI

Week 10: Azure Machine Learning

Week 11: Final project presentation

Final Project

Build data model from the given files

- Car price index
- Gas price index
- US Transportation CPI
  - CPI values
  - CPI series lookup
  - CPI period lookup (JSON)

Final Project

Analysis you need to perform

- Relationships between car price index, gas price index, and US Transportation CPI
- Visualize the data
  - Show the trends
  - Show the relationships

Final Project

Questions to ask for data modeling:

- What columns do they contain?
- How do you flatten the JSON file?
- How will you join them together?

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Lab 06

Verify your access to Azure Synapse and Power BI

Verify your access to final project files

Discuss Assignment 06 requirements

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Midterm

Feel free to ask questions via private chat