INNOVATIVE DATA SOURCES AND TOOLS: GENERATIVE AI

Data Analytics for Professional Accountants (ACCTG 522)

Class 7 | MPAcc Class of 2025

Welcome!

Class Agenda

- **Review**
- Brief Overview on Generative AI
- Labs:
  - Pure Oils Part 1 (Chat GPT and Python)
  - Pure Oils Part 2 (Alteryx)
- Conclusion and look ahead

The Analytical Mindset

The Analytical Mindset is defined as the ability to work with data to apply appropriate analytics and interpret and share insight with stakeholders.

Why do we care about Extract, Transform & Load (ETL)?

The Extract, Transform & Load or ETL Process is the **first task** required to complete the analytical process.

- In most cases, data required for the analytical process is stored in a database and must be **extracted** from that database and **loaded** into analytics software.
- More challenging **extraction** (typically **unstructured**) require more **advanced** tools.
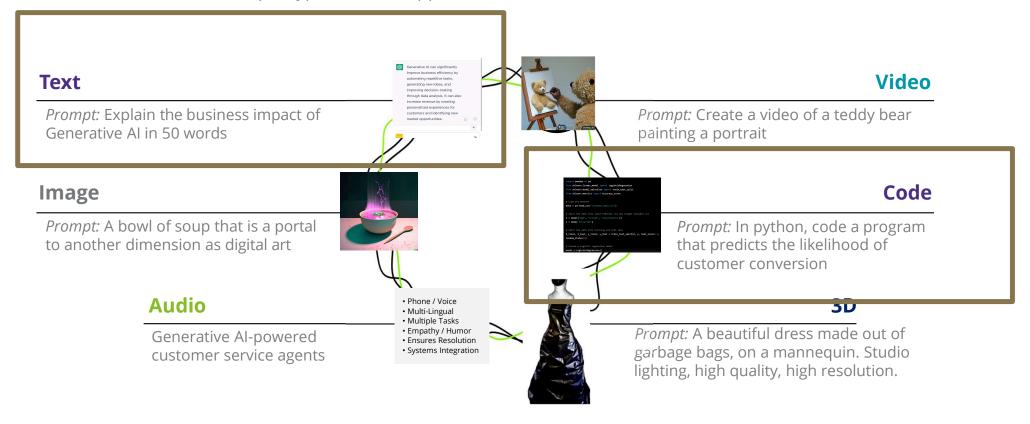
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Generative AI capabilities

Generative AI can produce a wide range of outputs depending on the specific application and type of data that is needed. Here are some common output types that are applicable to business

Text

Prompt: Explain the business impact of Generative AI in 50 words

Generative AI can significantly improve business efficiency by automating repetitive tasks, generating new ideas, and improving decision-making through data analysis. It can also increase revenue by creating personalized experiences for customers and identifying new market opportunities.

Video

Prompt: Create a video of a teddy bear painting a portrait

Image

Prompt: A bowl of soup that is a portal to another dimension as digital art

Code

Prompt: In python, code a program that predicts the likelihood of customer conversion

Audio

Generative AI-powered customer service agents

- Phone / Voice
- Multi-Lingual
- Multiple Tasks
- Empathy / Humor
- Ensures Resolution
- Systems Integration

3D

Prompt: A beautiful dress made out of garbage bags, on a mannequin. Studio lighting, high quality, high resolution.

Core Capabilities: Doc & Data Intelligence

Doc Intelligence

- Automated understanding and summarization of documents
- Quick extraction of important points and data from any text
- Comparison of document contents to identify key differences
- Accurate language translation for diverse document types
- Trend and pattern detection within large volumes of text

Data Intelligence

- Connect to any data source, integrating seamlessly with AI.
- Utilize AI to uncover deep insights from complex datasets.
- Empower finance to do real-time decision-making with dynamic, AI-driven data analysis.
- Leverage predictive analytics to forecast trends and guide strategic planning.

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AI Engagement Models: Prompt vs. Pre-Prompt

Prompt-Response

- Use an AI assistant for direct, real-time interaction to receive immediate feedback and assistance.

- Adaptive AI responses evolve from each user interaction, enhancing accuracy and relevance.

- Enable swift problem-solving and decision support, improving overall efficiency and user experience.

Pre-Prompt

- AI operates in the background based on predefined prompts and conditions.

- Conducts continuous background processing for data analysis, info generation, and monitoring.

- Automates tasks to streamline operations and prepare actionable insights without user intervention.

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Lab Part 1

Help Skylar Swindler at Pure Oils provide evidence of his company's *legitimate* existence:

- Single Prompt ("One Shot" approach)
- Multi prompts with Iterative Refinement
- Use as a Coding Assistant

- *Generate data for 110 current employees in csv format*

Lab Part 2

Assess the output files from classmates:

- Alteryx workflows:
  - Generate a diagnostic for a fake/AI generated csv file
  - Look for red flags, set up tests, use Alteryx to help find and document the red flags

1. UniqueID: A unique identifier that was added to the dataset after it was compiled. It has no meaning other than to uniquely identify each row and make it easier to refer to a specific line of data.
2. LastName: The employee's last name. If they do not have a last name in the database, it is listed as "NA".
3. MiddleInitial: The employee's middle initial. If they do not have a middle initial in the database, it is listed as "NA".
4. FirstName: The employee's first name. If they do not have a first name in the database, it is listed as "NA".
5. Gender: The gender of the employee: male, female, or other.
6. Job Title: The employee's current job title.
7. Department: The department in which the employee works.
8. HireDate: The date the employee was hired. Listed as dd/mm/yyyy. Dates can range from 6/23/1951 through 12/31/2023.
9. TerminationDate: The date the employee was terminated from the organization. Listed as dd/mm/yyyy. If an employee has not been terminated, this field should be null.
10. AnnualSalary: The employee's base annual salary for the fiscal year.

Thank you!