Applied A.I. Solutions

Data Visualization Techniques

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COURSE OVERVIEW

COURSE DESCRIPTION

- This course will provide an introduction to data visualization principles.
- The focus will be on the tools and techniques of data visualization.
- Students will apply current industry best practices to build effective data reports, interactive dashboards and deliver business insights using Tableau Software toolkit and Python libraries.

COURSE OUTCOMES

- Explain the data visualization process and best practices.
- Communicate business insights to stakeholders by building effective data reports and interactive dashboards.
- Interpret and infer conclusions from data visualizations.
- Formulate data stories using Tableau capabilities, and Python libraries such as Matplotlib, NumPy, Seaborn.
- Create effective data charts using current industry tools such as Tableau Software.

3

TOPICAL OUTLINE

Week 1	Day 1	1. The value of data, the importance of context and storytelling 2. Introduction to data types (structured and unstructured) 3. Business Intelligence tools: Tableau software – Basic Visualizations 4. Data Warehousing and Business Intelligence framework, main features
	Day 2	1. Process Automation, Collaboration, Communication, Research and Decision Making 2. Data Blending and Tableau Integration 3. Parameters, Calculated Fields, Filters 4. Data Preparation (ETL/ELT)
	Day 3	5. Business Analytics 6. What-if analysis, Forecasting 7. Open-concept architecture

TOPICAL OUTLINE

Week 2

Day 1

1. Advanced Data Visualizations and Analytics techniques using Tableau (Pareto, Correlations, Regressions, Clustering, Normal Distribution)
2. Dashboards and Scorecard, Balanced Scorecard
3. Dashboarding Best Practices
4. Key Performance Indicators (KPIs)

Day 2

1. Advanced Data Visualizations and Analytics techniques using Tableau (Pareto, Correlations, Regressions, Clustering, Normal Distribution)
2. Python – Advanced Data Visualizations and Analytics techniques
3. Python – Tableau Integration
4. Data Visualization Python Libraries

Day 3

1. Python – Advanced Data Visualizations and Analytics techniques
2. Python – Tableau Integration
3. Data Visualization Python Libraries

TOPICAL OUTLINE

Week 3	Day 1	1. Storytelling 2. Storytelling Case Study 3. Storytelling Best Practices
	Day 2	4. Project Due
	Day 3	1. Final Exam

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