

Data Management KSAs for Curriculum Alignment

1. Data Storage, Operations and Administration						
	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs	Course Number/Name	Learning Outcome
a	Explain the role of data, information, and databases in organizations (for decision making).	Skill	1			
b	Define and appropriately use key terms such as: information, data, database, database management system, metadata, data lake and data mining.	Knowledge	2			
c	Describe a database management system.	Knowledge	2			
d	Identify various types of data storage methods including local vs cloud and identify use cases for both.	Knowledge	2			
e	Describe a database management system (DBMS) and identify specific DBMS platforms and the role they play.	Knowledge	2			
f	Discuss and differentiate end-user vs meta data.	Knowledge	2			
g	Identify and differentiate structured vs unstructured data.	Knowledge	2	Software Development 1o		
h	Discuss and differentiate OLTP and OLAP databases.	Knowledge	2			
i	Demonstrate an understanding of database performance monitoring and tuning.	Knowledge	2			
j	Explain the data life cycle in terms of acquisition, migration, retention, expiration and disposition.	Knowledge	2			
k	Demonstrate an understanding of backup and recovery procedures and their necessity for disaster recovery and business continuity,	Skill	3			
l	Apply SQL data manipulation language such as Select (From), Insert, Update, Delete, JOIN (inner, outer, full, left, right), Where, Group By, Order By, etc.	Ability	3	Software 1d		
m	Demonstrate fundamental programming skills including the use of variables, loops, conditional branching, and program logic.	Skill	3	Cybersecurity 3a, Software Development 2c		
n	Describe the implications of data architecture on data processing.	Knowledge	2	Data Analytics 2d		
o	Demonstrate an understanding content tagging and its role in data management.	Knowledge	2			
p	Demonstrate an understanding of cloud architecture and the capabilities of services such as AWS, Azure, IBM, Oracle and Google.	Knowledge	2	Cyber Security 4d, Networking 1a, Software Development 1g, Machine Learning 1i		
q	Explain version control and the significant role it plays in data management.	Knowledge	2			
r	Identify and describe basic file types and demonstrate fundamental file management.	Skill	2	Cybersecurity 1g, Networking 5f, Software Development 1k		

s	Ability to install and configure software.	Ability	3	Cybersecurity 1d, Networking 5a, Software Development 1h		
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