

**CoLAB TalentReady IT Pathways
Software Development KSAs for Curriculum Alignment**

1. Database, Networking, Distributed System Fundamentals

	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs	Notes
a	Ability to normalize a database through 3rd normal form.	ability	3	Data Management 2j	
b	Knowledge of NoSQL databases.	Knowledge	3		
c	Ability to perform database schema design.	Ability	3		
d	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	Data Management 1l	
e	Knowledge of HTTP, HTTPS, SSL.	Knowledge	3		
f	Describe Infrastructure as code.	Knowledge	2		
g	Demonstrate an understanding of cloud architecture and the capabilities of services such as AWS, Azure, IBM, Oracle and Google.	Knowledge	2	Cyber Security Specialist 3c, Cyber Security Technologist 8g, Data Management 1p, Networking 4d	
h	Ability to install and configure software.	Ability	3	Cyber Security Specialist 1c, Cyber Security Technologist 1e, Data Management 1s, Networking 5a	
i	Knowledge of computer hardware.	Knowledge	2		
j	Ability to touch type.	Ability	2		
k	Identify and describe basic file types and demonstrate fundamental file management.	Skill	2	Cyber Security Specialist 1e, Cyber Security Technologist 1g, Data Management 1r, Networking 5f	
l	Explain data security in terms of authentication, authorization, access and auditing.	Knowledge	3	Cyber Security Specialist 2c, Cyber Security Technologist 2b3, Networking 4g	
m	Understand the components that make an large-scale system (e.g. SAN, load balancer).	Knowledge	3		
n	Identify and apply Transmission Control Protocol and Internet Protocol (TCP/IP), Internet Protocol Version 4 (IPv4), Internet Protocol Version 6 (IPv6) applications and services (e.g., rlogin, Simple Mail Transfer Protocol [SMTP], Telecommunications Network [Telnet], File Transfer Protocol [FTP], Domain Name System [DNS], Network File System [NFS], Voice over Internet Protocol [VoIP], Internet Control Message Protocol [ICMP]).	Knowledge	2	Networking 2h	