CoLAB TalentReady IT Pathways
Software Development KSAs for Curriculum Alignment

5. Algorithms and Design

	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs	Notes
a	Discuss the importance of algorithms in the problem-solving process.	Knowledge	2		
b	Discuss how a problem may be solved by multiple algorithms, each with different properties.	Knowledge	2		
c	Create algorithms for solving simple problems.	Skill	3		
d	Use a programming language to implement, test, and debug algorithms for solving simple problems.	Skill	3		
e	Implement, test, and debug simple recursive functions and procedures.	Skill	3		
f	Determine whether a recursive or iterative solution is most appropriate for a problem.	Skill	3		
g	Implement a divide-and-conquer algorithm for solving a problem.	Skill	3	Cyber Specialist 7h	
h	Apply the techniques of decomposition to break a program into smaller pieces.	Skill	3		
i	Implement a coherent abstract data type, with loose coupling between components and behaviors.	Skill	3	Cyber Specialist 7i	
j	Evaluate the relative strengths and weaknesses among multiple designs or implementations for a problem.	Skill	4		