

CoLAB TalentReady IT Pathways
Software Development KSAs for Curriculum Alignment

2. Fundamental Programming Concepts

	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs	Notes
a	Describe uses of primitive data types.	Knowledge	1		
b	Write programs that use primitive data types.	Skill	3		
c	Demonstrate fundamental programming skills including the use of variables, loops, conditional branching, and program logic.	Skill	3	Cyber Security Specialist 7a, Data Management 1m	
d	Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures.	Skill	3	Cyber Security Specialist 7b	
e	Analyze the behavior of simple programs involving the fundamental programming constructs variables, expressions, assignments, I/O, control constructs, functions, parameter passing, and recursion.	Knowledge	3		
f	Design and implement a program that defines functions and passes parameters.	Skill	3		
g	Write a program that uses file I/O to provide persistence across multiple executions.	Skill	2		
h	Choose appropriate conditional and iteration constructs for a given programming task.	Skill	4		
i	Identify the base case and the general case of a recursively-defined problem.	Knowledge	2		
j	Describe the concept of recursion and give examples of its use.	Knowledge	1		