AWS Skills to Jobs

Software Development Engineer Competencies

Skill/Competency Categories

Cloud Computing
Programming/Scripting
Internet Fundamentals
Operating Systems
Data Structures and Algorithms
Professional Communication
Version Control
Production-Level Development
Databases
UI Development
Testing
Problem Solving

Category: Cloud Computing

Skill/Competency Statements

Relate the concept of virtualization to cloud computing, explaining the functionality of resources delivered through the cloud.
Determine proper allocaRelate Cloud Operations to financial and business outcomes (i.e. Cost, development timelines.)tion of cloud resources and apply necessary changes, based on performance data
Evaluate costs associated withCompare different core cloud services and explain how they are used. Specifically relating to Compute, Storage, Networking, Database, Security (IAM). data acquisition, transfer, and provisioning from various sources into the collection system (e.g., networking, bandwidth, ETL/data migration costs)
Explain Serverless and Container technologies.

Category: Programming/Scripting

Skill/Competency Statements

Modify a local development environment to emulate an existing production environment.
Explain programming concepts such as data structures, conditionals, loops, variables, functions as well as object oriented principles.
Produce code that can read, parse, and write to files.
Compare, select, and install popular libraries of a given programming language.
Reconstruct a code sample to be defensive and handle edge cases, exceptions, errors, and malformed inputs.

Category: Internet Fundamentals

Skill/Competency Statements

Identify common network troubleshooting tools and techniques.
Explain the different HTTP response status codes.
Use a RESTful API to consume and edit data via GET/POST requests.
Describe encryption and decryption.

Category: Operating Systems

Skill/Competency Statements

Manipulate and maneuver files and folders using the command line.
Create and manage processes and threads.
Install, configure, and remove software on an operating system.
Explain how CPU, Memory and Disk work together.

Category: Data Structures and Algorithms

Skill/Competency Statements

Implement data structures including arrays, stacks, queues, linked lists, trees, graphs, and hash tables.
Identify appropriate data structure for a given set of requirements; explain rationale behind rejected alternatives.
Implement sorting algorithms including selection, bubble, insertion, merge, and shell.
Identify appropriate sorting algorithm for a given set of requirements; explain rationale behind rejected alternatives.

Category: Professional Communication

Skill/Competency Statements

Demonstrate ability to develop and maintain effective working relationships with colleagues, managers and customers.
Create clear and meaningful documentation or presentations to clearly communicate an idea.
Demonstrate ability to communicate to stakeholders of with different technical depth.
Demonstrate technical intellectual curiosity.

Category: Version Control

Skill/Competency Statements

Explain the difference between centralized and distributed version control systems.
Collaborate with a team using advanced git commands including branch, fetch, rebase, stash, revert, config.
Apply organization specific protocols for submitting pull requests, documentation, and code reviews.

Category: Production-Level Development

Skill/Competency Statements

Explain the difference between concepts of continuous integration, delivery, and deployment.
Identify and explain the value of common tools, used as part of a delivery pipeline, to deploy applications into a production environment.
Visualize and explain the unique components of a software system and how they interact.
Explain the different phases of the software development lifecycle including goals and deliverables.
Practice the different roles - driving and navigating – during pair programming sessions.

Category: Databases

Skill/Competency Statements

Compares use-cases between/for a relational and non-relational database.
Connect a web app to an RDS instance and a DynamoDB instance.
Store data using SQL/NoSQL queries and ORMs/NoRMs.

Category: UI Development

Skill/Competency Statements

Build a web UI using HTML/CSS/JavaScript based on a prototype
Build a web UI using React based on a prototype.

Category: Testing

Skill/Competency Statements

Explain Test Driven Development and the benefits
Write and execute unit, integration, and functional tests.
Automate API tests for a simple RESTful API using Postmate and Postman.

Category: Problem Solving

Skill/Competency Statements

Utilize debugger and IDE tools to automate issue resolution and help triangulate root cause.
Demonstrate computational thinking to breakdown a problem in smaller components as part of solution design or debuggin.
Automate Evaluate multiple sources of information (Internal and via searches) to investigate routes to resolve a problem.API tests for a simple RESTful API using Postmate and Postman.

Thank you!