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Illuminating Talent

Test Results and Interview Guide

Candidate: **Elizabeth Wantsajob**
Assessment: SAS - Usage and Concepts
Completed: November 7, 2026
Prepared for: Sara Maple
Example Company

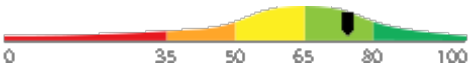
What's Included

- Overall Score
- Competency Summary Table
- Comparison Matrix
- Detailed Competency Results with Interview Guide

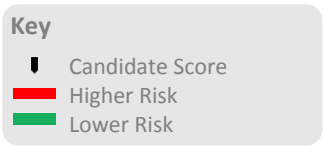
Important Note: The SAS - Usage and Concepts assessment measures key factors related to high performance and tenure in this job. Attribute types measured vary by test, but can include cognitive ability, skills, knowledge, personality characteristics, emotional intelligence, and past behavioral history. This report includes a one page summary, followed by detailed results with an embedded interview guide. Note that these results should always be used as a part of a balanced candidate selection process that includes independent evaluation steps, such as interviews and reference checks.

Proprietary and Confidential

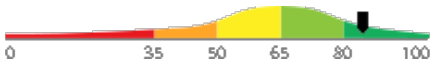
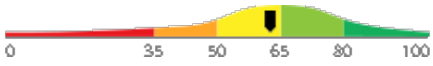
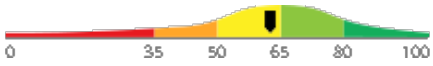
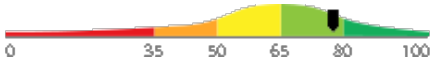
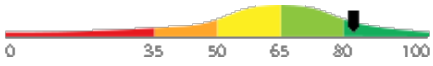
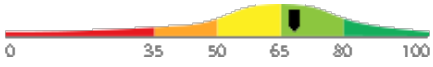
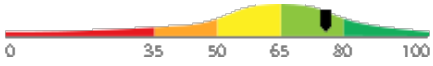
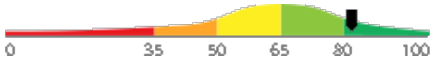
Overall

Candidate	Score	Interpretation
Elizabeth Wantsajob beth.wantsajob@gmail.com SAS - Usage and Concepts November 7, 2026	74	

The candidate exhibits a solid and well-rounded understanding of SAS, including proficiency with key procedures, data step operations, conditional logic, and data set manipulation techniques. The candidate is likely capable of handling most analytical tasks independently, though there may be some room for growth in specialized areas such as advanced macro development or optimizing code for readability and maintainability.



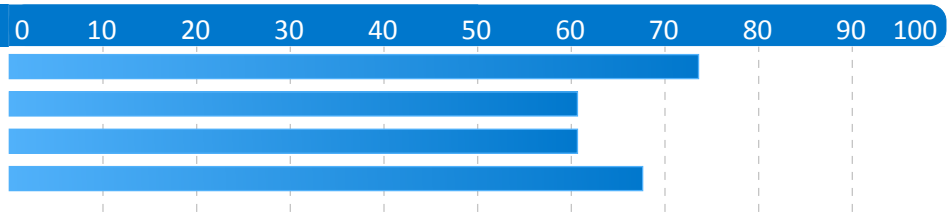
Competency Summary

Competency	Score	Interpretation
Skills/Knowledge (relates to immediate readiness)		
Combining Data Sets	84	
DATA Step and Data Manipulation (Coding Tasks)	62	
SAS Procedures for Data Summary and Analysis (Coding Tasks)	62	
DATA Step and Data Manipulation	77	
Handling Missing Values and Data Quality	82	
Macro Programming	68	
SAS Functions for Data Transformation	75	
SAS Procedures for Data Summary and Analysis	82	

Comparison

Percentile scores indicate how the candidate compares to other test-takers within various groups. The candidate scored equal to or better than the fraction of test-takers indicated by the percentile.

Test-Taker Group	Percentile
Global	74th
North America	61st
United States	61st
Example Company	68th



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Artificial Intelligence (AI) Generated Scores

This table includes one or more scores derived from a large language model AI query. AI-derived scores are non-deterministic. That is, they are not precisely repeatable. Therefore, these scores should always be treated as supplementary information and should never be used exclusively or compared to hard cutoff values.

Estimated Value	Score	Confidence	Interpretation
Knowledge, Skills, and Abilities Summary	-	-	Summary Points (AI): • (Generic Text for Sample Report) Strong performer in Drag and Drop Files tasks, indicating comfort with file management and basic computer interactions. • Demonstrates solid numerical accuracy in Recognizing and Confirming Numbers, a valuable asset in detail-oriented roles. • Moderate overall performance in Analytical Thinking and Attention to Detail, with adequate grammar skills but room for improvement. • Struggles with Reading and Analyzing Problems, which may limit effectiveness in roles requiring critical reading and complex problem-solving. • Lowest performance in Navigating Between Screens, suggesting difficulty with multi-screen software workflows that could impact productivity in computer-intensive roles. Narrative (AI): Elizabeth Wantsajob demonstrates a mixed profile of knowledge, skills, and abilities across the assessed competencies. Elizabeth shows a strong aptitude in Drag and Drop Files, performing well on this technical task and suggesting she is comfortable with this type of computer interaction. This is a notable strength that would translate well into roles requiring file management and basic computer navigation tasks. In the area of Analytical Thinking and Attention to Detail, Elizabeth performs at a moderate level. She demonstrates solid ability in Recognizing and Confirming Numbers, which suggests she is careful and accurate when working with numerical data — a valuable skill in detail-oriented work environments. Her Grammar performance is adequate but leaves room for improvement, indicating she may occasionally make written communication errors. Her weakest area within this competency is Reading and Analyzing Problems, where she struggled to consistently interpret and work through written problem scenarios. This may impact her effectiveness in roles that require critical reading, written comprehension, or complex problem-solving. Elizabeth's most significant area for development is Navigating Between Screens, where she scored considerably lower than the other competencies. This suggests she may have difficulty efficiently moving through software interfaces or multi-screen workflows, which could slow productivity in roles that rely heavily on navigating computer applications or data entry systems. Overall, Elizabeth brings some useful technical strengths, particularly in file management and numerical accuracy, but would benefit from targeted development in software navigation and analytical problem-solving to be fully effective in roles that demand these skills. Computed on: April 2, 2026, 11:09:49PM EDT

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Detail

Candidate:	Elizabeth Wantsajob, beth.wantsajob@gmail.com
Assessment:	SAS - Usage and Concepts
Authorized:	November 7, 2026, by Sara Maple, Example Company, qamailsaram.mike@hravatar.com
IP Address:	96.241.65.10
IP Country:	United States
IP State:	Virginia
IP City:	Gainesville
Started:	November 7, 2026, 9:07:08AM EST
Completed:	November 7, 2026, 9:07:08AM EST
Overall Score:	74

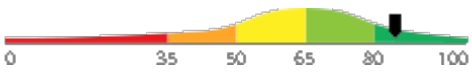
Knowledge and Skills Detail

This section contains a list of job-related knowledge areas and skills that have been evaluated. Low scores in these areas often indicate that additional learning may be required before top performance can be achieved.

Detail | Interview Guide

Combining Data Sets

Score: 84



Description:

Combining data from multiple sources is a frequent task in SAS. This includes merging data sets by a common key variable, appending data sets to stack rows together, and joining data using PROC SQL. Understanding how to handle one-to-many and many-to-many relationships is essential.

Interpretation:

Candidate should achieve superior job performance in this area with little or no training.

The candidate exhibits an advanced and comprehensive understanding of combining data sets in SAS. They are highly proficient in merging, appending, and SQL-based joining techniques, and demonstrate strong competency in managing complex one-to-many and many-to-many data relationships.

When would you choose to use SET with a BY statement to interleave data sets versus using a MERGE statement, and what is the difference in output?

1	2	3	4	5
Cannot distinguish between interleaving and merging or is unfamiliar with using SET with a BY statement.		Understands the basic difference but struggles to clearly explain when each approach is appropriate.		Clearly explains that interleaving combines sorted data sets without matching rows while merging links rows by a common key, with accurate use case examples.

What steps are required to merge two SAS data sets using a DATA step, and what could go wrong if those steps are not followed?

1	2	3	4	5
Does not know that data sets must be sorted before merging or cannot describe the basic MERGE statement syntax.		Knows that sorting by the BY variable is required and describes the MERGE statement but does not address potential issues.		Accurately describes sorting, MERGE and BY statement syntax, and identifies risks such as many-to-many merges producing unexpected results.

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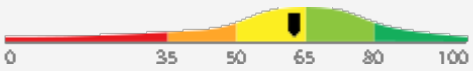
Detail

DATA Step and Data Manipulation (Coding Tasks)

Score: 62



Description:

Covers the use of pointers to reference and manipulate memory addresses, along with dynamic memory allocation and deallocation using malloc, calloc, realloc, and free. Includes pointer arithmetic, dereferencing, and avoiding common issues like memory leaks and dangling pointers.

Interpretation:

The candidate exhibits average writing skills, which can hinder high performance in some jobs.

The candidate possesses a moderate working knowledge of C programming, demonstrating familiarity with core concepts including data types, control flow, functions, and basic file I/O. They may require some guidance when working with more advanced topics such as dynamic memory allocation, modular design, or debugging complex logic.

Overall AI Score:	65.0
Lines of Code:	15.0
Syntax Errors:	5.0
AI Confidence Level:	50
Match with Ideal Response (AI):	30.0
Structure:	50.0
Syntax:	30.0

Please see below to view the essay submitted.

Interview Guide

Walk me through how you would dynamically allocate memory for an array of 10 integers, use it, and then properly release it. What issues might arise if you don't follow best practices?

1	2	3	4	5
Cannot write correct allocation code; unaware of free() or memory leak risks.		Writes mostly correct malloc/free code; identifies memory leaks but misses other risks.		Correct malloc, use, and free; identifies leaks, dangling pointers, and NULL check on allocation.

Can you explain what a pointer is in C and describe a situation where you would use one?

1	2	3	4	5
Vague or incorrect definition; cannot describe a practical use case.		Correct basic definition; gives a simple but valid use case with some gaps.		Clear definition with accurate use case; mentions address storage, dereferencing, or dynamic memory.

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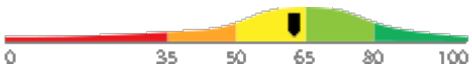
Detail

SAS Procedures for Data Summary and Analysis (Coding Tasks)

Score: 62



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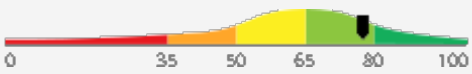
Detail

DATA Step and Data Manipulation

Score: 77



Description:

The DATA step is the core building block of SAS programming. It is used to read, create, and modify SAS data sets. This includes using conditional logic (IF/THEN/ELSE), loops (DO), and arrays to transform and restructure data.

Interpretation:

Candidate should achieve above average job performance in this area with little or no training.

The candidate exhibits a solid and well-rounded knowledge of SAS, including proficiency with data manipulation, statistical procedures, functions, conditional logic, and data set merging. They are expected to handle most complex data analysis tasks independently, with only occasional challenges in highly advanced or nuanced areas.

Interview Guide

Describe a situation where you used arrays and a DO loop together in a DATA step to transform or restructure data. What problem were you solving and how did your approach work?

1	2	3	4	5
Cannot describe a real use case or confuses arrays and loops with unrelated concepts.		Describes a plausible use case but provides limited detail about the syntax or logic used.		Clearly describes a practical use case with accurate explanation of array definition, loop indexing, and data transformation logic.

Can you walk me through what happens when SAS executes a DATA step? What is the role of the Program Data Vector (PDV)?

1	2	3	4	5
Cannot describe the DATA step execution process or has no knowledge of the PDV.		Describes the DATA step as reading and writing data but gives a vague or incomplete explanation of the PDV.		Clearly explains compilation and execution phases, and accurately describes the PDV as a temporary row-by-row workspace.

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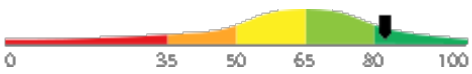
Detail

Handling Missing Values and Data Quality

Score: 82



Description:

Missing values are common in real-world data and must be handled carefully to avoid errors in analysis. This includes identifying missing values, understanding how SAS treats missing numeric and character values, and writing code to correct or exclude missing data.

Interpretation:

Candidate should achieve superior job performance in this area with little or no training.

The candidate exhibits an advanced and comprehensive understanding of handling missing values and ensuring data quality in SAS. They are highly proficient in identifying missing data, understanding SAS's treatment of missing numeric and character values, and writing precise, efficient code to address a wide range of data quality issues.

Interview Guide

Describe how you would identify and handle missing values in a large data set before running a statistical analysis. What SAS tools or techniques would you use?

1	2	3	4	5
Cannot name specific SAS tools or techniques for identifying or handling missing data.		Mentions using PROC MEANS with NMISS or IF statements to filter missing values but provides limited detail.		Describes a thorough approach using tools like PROC MEANS, PROC FREQ, or PROC MI, and explains strategies such as exclusion, imputation, or flagging missing values.

How does SAS represent missing values for numeric and character variables, and how can missing values affect the results of a calculation or procedure?

1	2	3	4	5
Does not know how SAS represents missing values or cannot describe any effect on calculations.		Correctly identifies that numeric missing is a period and character missing is a blank but gives only a vague explanation of their effects.		Accurately describes both representations, explains that missing numerics are treated as the smallest value in comparisons, and notes effects on PROC MEANS, sums, and conditional logic.

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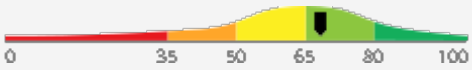
Detail

Macro Programming

Score: 68



Description:

SAS macros allow programmers to write reusable, flexible code by using macro variables and macro programs to automate repetitive tasks. This includes defining and referencing macro variables, writing macro programs with parameters, and using macro logic to control code execution.

Interpretation:

Candidate should achieve above average job performance in this area with little or no training.

The candidate demonstrates a solid proficiency in SAS macro programming. They are capable of writing macro programs with parameters, referencing macro variables, and using macro logic to control code execution across a variety of scenarios.

Interview Guide

Describe how you have used a macro program with parameters to reduce repetitive code in a SAS project. What were the inputs and what did the macro do?

1	2	3	4	5
Cannot describe a macro program with parameters or confuses macro variables with macro programs.		Describes a basic macro program with parameters but provides limited detail about how parameters were used within the macro body.		Clearly describes a practical macro with defined parameters, explains how the macro body used those parameters to generalize the code, and notes efficiency or maintainability benefits.

What is a SAS macro variable, and how do you define and reference one in your code? Can you give a simple example of why you would use one?

1	2	3	4	5
Cannot define a macro variable or does not know the syntax for creating or referencing one.		Correctly defines a macro variable using %LET and references it with an ampersand but gives a vague or trivial use case.		Accurately explains macro variable syntax, gives a clear practical example such as storing a date or file path, and explains how it makes code easier to update and reuse.

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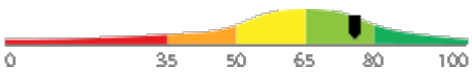
Detail

SAS Functions for Data Transformation

Score: 75



Description:

SAS includes a wide range of built-in functions used to manipulate and transform data within the DATA step and PROC SQL. Commonly used functions handle character strings (e.g., SUBSTR, TRIM, UPCASE), numeric values (e.g., ROUND, ABS, INT), and dates (e.g., MDY, DATEPART, INTCK). These functions are used in nearly every data preparation workflow.

Interpretation:

Candidate should achieve above average job performance in this area with little or no training.

The candidate demonstrates a solid and competent grasp of SAS built-in functions for data transformation, capably applying character, numeric, and date functions within standard data preparation workflows. They are likely able to work independently on most tasks involving these functions with minimal errors.

Interview Guide

How would you calculate the number of days or months between two date variables in SAS? What functions would you use and what do you need to be aware of when working with SAS dates?

1	2	3	4	5
Does not know how SAS stores dates or cannot name a relevant date function.		Knows that SAS stores dates as integers and mentions subtraction or INTCK but gives an incomplete explanation.		Accurately explains SAS date storage as days since January 1, 1960, correctly uses INTCK or subtraction, and notes the need for proper formats to display date values.

What SAS functions would you use to clean up a character variable that contains extra spaces and inconsistent capitalization? How would you apply them?

1	2	3	4	5
Cannot name relevant functions or does not know how to address spacing or capitalization issues in SAS.		Names one or two relevant functions such as TRIM or UPCASE but does not explain how to combine them effectively.		Names and correctly explains functions like STRIP or TRIM, UPCASE or LOWCASE, and COMPRESS, and describes how to combine them in a DATA step assignment statement.

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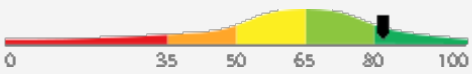
Detail

SAS Procedures for Data Summary and Analysis

Score: 82



Description:

SAS provides built-in procedures (PROCs) that are used to sort, print, summarize, and analyze data. Commonly used procedures include PROC SORT, PROC PRINT, PROC MEANS, PROC FREQ, and PROC SQL. These are used in nearly every SAS analysis workflow.

Interpretation:

Candidate should achieve superior job performance in this area with little or no training.

The candidate demonstrates an advanced and comprehensive mastery of SAS built-in procedures for data summary and analysis. They are highly proficient with the full range of core PROCs and can be expected to leverage them expertly across complex and varied SAS analysis workflows.

Interview Guide

How would you use PROC SQL in SAS to join two data sets and filter the results? How does this compare to using a DATA step merge?

1	2	3	4	5
Cannot write or describe a basic PROC SQL join or does not know how it differs from a DATA step merge.		Describes a basic SQL join with correct syntax but gives a limited or partially incorrect comparison to DATA step merging.		Accurately describes PROC SQL join syntax, explains key differences from DATA step merging (e.g., no pre-sorting required), and notes practical trade-offs.

What is the difference between PROC MEANS and PROC FREQ, and when would you use each one?

1	2	3	4	5
Cannot distinguish between the two procedures or confuses their purposes.		Correctly identifies that PROC MEANS is for numeric summaries and PROC FREQ is for counts but gives limited detail.		Clearly explains each procedure's purpose, key options or statements, and gives concrete examples of appropriate use cases for each.

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IT Coding Tasks

During the assessment, the candidate was asked to write one or more programs or scripts. Their responses are included below for review.

Question or Task	Response

Complete the provided partial C program by filling in the missing sections marked with TODO comments. Your completion must use standard C keywords and libraries.
 	
The program declares a function called duplicate_array that:
1. Takes a const int pointer to a source array and its length as parameters.
2. Uses calloc to allocate a new int array of the same length.
3. Returns NULL if calloc fails.
4. Copies each element from the source array into the new array using pointer arithmetic (not array subscript notation).
5. Returns the pointer to the newly allocated copy.
 	
In main, the program:
1. Declares and initializes a stack array of 4 integers with values 5, 15, 25, 35.
2. Calls duplicate_array to create a heap-allocated copy.
3. Checks for NULL and prints an error and returns 1 if the call failed.
4. Prints each element of the duplicate using a loop.
5. Frees the duplicate array.
 	
Use appropriate indentation, common C coding conventions, and add brief inline comments where needed. Type your completed source code as your response.
	#include <stdio.h>
	#include <stdlib.h>
	
	int *duplicate_array(const int *src, int length) {
	/* TODO: Use calloc to allocate a new array of 'length' integers, return
	NULL if calloc fails, copy elements from src using pointer arithmetic,
	and return the new pointer. */
	calloc(303);
	}
	
	int main(void) {
	/* TODO: Declare and initialize a stack array of 4 integers: 5, 15, 25, 35,
	then call duplicate_array and store the result. Check for NULL and
	print an error message returning 1 if it failed. */
	array[4]={5,15,25,35};
	
	int i;
	
	/* Print each element of the duplicate */
	for (i = 0; i < 4; i++) {
	printf("duplicate[%d] = %d\n", i, *(duplicate + i));
	}
	
	/* Free the duplicate array */
	free(duplicate);
	return 0;
	}
	
	Comments (AI): The code segment has several syntax errors and incomplete implementation. The duplicate_array function does not correctly allocate memory or copy elements. The main function has syntax errors and does not properly call the duplicate_array function. However, the structure and intent of the code are somewhat clear, and the code attempts to follow the requirements.

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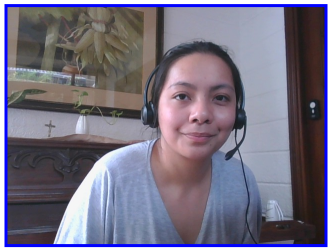
Identity Confirmation Photos

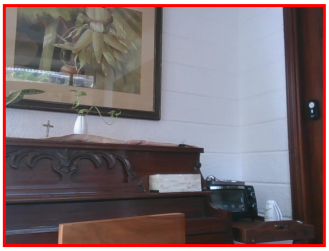
The following photos of the candidate and any identification were uploaded during the assessment session.

Photo Analysis Results	
- Risk:	Medium risk of cheating based on image inconsistencies
- Percent match among processed faces	100%
- Total images processed	17
- Total images with valid faces	14 (82%)
- Total pairs of faces compared	13
- Pairs in which faces matched	13 (100%)

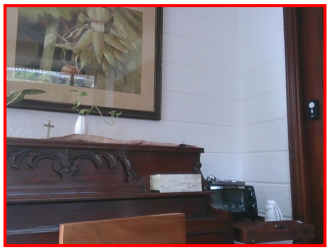


Pre/Post-Test Photo

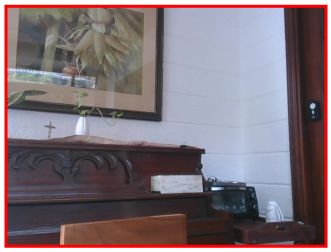
ID Photo



In-Test Error Detected (No Face Detected)

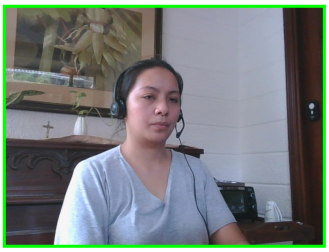


In-Test Error Detected (No Face Detected)

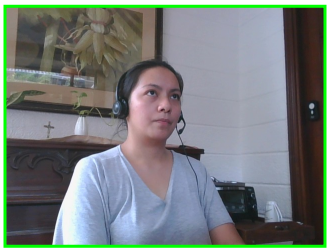


In-Test Error Detected (No Face Detected)

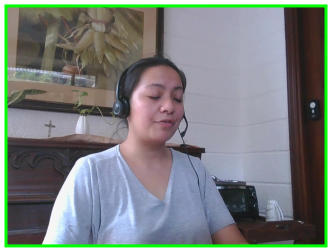
In-Test Photo



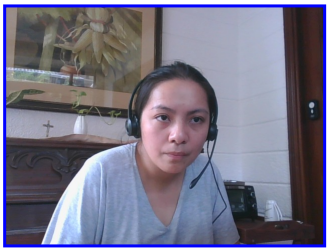
In-Test Photo



In-Test Photo



In-Test Photo



Pre/Post-Test Photo

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Resume or CV

Summary Updated on

Motivated career professional with extensive experience in office administration and management. Proven track record of improving efficiency, reducing costs, and enhancing office operations through strategic initiatives and technology implementation.

Objective

I am seeking a role where I can use my many skills and my exceptional judgment and empathy for customers to make a difference to a growing company.

Education

- Associate of Applied Science in Office Administration, Portland Community College, 2020

Experience

- General Office Clerk, Paramount Office Management, 09/2023 – Present
- Administrative Assistant, Global Enterprises Inc., 04/2021 – 08/2023
- Administrative Assistant, Innovative Business Solutions Ltd., 07/2019 – 03/2021

Other Qualifications

- Microsoft Office Specialist (MOS) Certification
- Certified Administrative Professional (CAP)
- International Association of Administrative Professionals (IAAP) Certification

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Report Preparation Notes

- Hiring decisions should never be based on a single source of information. The most effective use of this assessment report is as a part of a multi-faceted program of candidate evaluation that includes resume review, interviews, and reference checks.
- Overall vs Percentiles Scores: The overall score reflects the success in the test, based on the mean (average) and standard deviation of the test scores. The percentile score reflects the percentage of test-takers who scored equal or below this overall score. We recommend you use the Overall Score as your primary evaluation criteria. However, percentile scores can often be useful in comparing specific candidates against one another and with a group, such as for test takers in a certain organization or within a certain account.
- Note that comparison information is calculated based on completed instances of this assessment at that time the assessment is scored. As additional instances are completed, the comparative data may change. You can always update a report to the current values by clicking on 'Recalculate Percentiles' within the online results viewing pages at www.hravatar.com.
- Most competency scores are norm-based, which means that they can be interpreted in terms of their distance from the average or mean score. For all scales, a score equal to the mean receives a score of 65 and scores above and below this value are set so that a score change of 15 equals one standard deviation.
- For linear competencies, higher is better across the entire scale. For these scales a score between 65 and 80 (light green) represents 0 to 1 standard deviation above the mean and a score above 80 (dark green) represents more than one standard deviation above the mean. Similarly, a score of 50 - 65 (yellow) represents 0 to 1 standard deviation below the mean, while a score of 35 - 50 (orange) equates to 1 to 2 standard deviations below the mean, and a score below 35 represents more than 2 standard deviations below the mean.
- Sim ID: 21061-1, Key: 0-0, Rpt: 68, Prd: 9911, Created: 2026-11-07 09:07 EST
- UA: Mozilla/5.0 (Windows NT 6.3; Trident/7.0; Touch; rv:11.0) like Gecko

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Score Calculation Detail

The following table provides a summary of how the overall score was calculated from each of the individual competency scores. First, all competency scores are calculated on a scale of 0-100. Note that some competencies use their color category rather than their actual numeric score in the overall calculation. For these, a standard score associated with the assigned color category is used in the overall score calculation rather than the actual numeric score. This is reflected in the ''Score Value Used'' column. Next, a weighted average of scores is computed using individual competency weights, typically set using job analysis data provided by the US Government Occupational Information Network (O*Net).

Competency	Score	How applied to overall	Score Value Used	Weight (%)
Combining Data Sets	84.9253	Numeric Score	84.9253	12.5000
DATA Step and Data Manipulation	77.7676	Numeric Score	77.7676	12.5000
DATA Step and Data Manipulation (Coding Tasks)	62.9784	Numeric Score	62.9784	12.5000
Handling Missing Values and Data Quality	82.5394	Numeric Score	82.5394	12.5000
Macro Programming	68.6058	Numeric Score	68.6058	12.5000
SAS Functions for Data Transformation	75.9906	Numeric Score	75.9906	12.5000
SAS Procedures for Data Summary and Analysis	82.4017	Numeric Score	82.4017	12.5000
SAS Procedures for Data Summary and Analysis (Coding Tasks)	62.9784	Numeric Score	62.9784	12.5000
Weighted Average:				74.7734
Final Overall Score:				74

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Notes

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