JOB READY ASSESSMENT BLUEPRINT

COMPUTER PROGRAMMING

Test Code: 4023
Version: 01

Specific Competencies and Skills Tested in this Assessment:

Analyze Programming Problems and Flowchart Solutions
Analyze user requirements for a given outcome
Determine input and output formats for a program
Determine the flow of data through network
Identify and describe a data flow diagram
Identify and describe a process logic diagram
Describe the system development cycle (i.e., code management, ongoing revisions)

Design Program Solutions
Determine where data is to be accessed/stored
Design data storage and layout
Apply principles of quality, efficient programming
Explain the importance of a design review
Apply implementation plans for a new system
Assess ongoing impact of existing systems

Code Programs
Determine the variables and data types for a program
Prepare and code routines using structured logic
Identify various programming languages
Apply appropriate computer language syntax
Explain unit testing requirements
Document appropriate comments and programmer notes

Computer Programming (continued)

Test Programs
Explain system testing requirements
Design and analyze test plan for use in program testing
Test programs and evaluate results for accuracy
Correct programming errors discovered during testing
Identify appropriate debugging tools

Maintain Programs
Change existing programs when requirements change
Correct existing program errors
Update documentation for existing programs
Provide user instructions on program modifications

Complete User Documentation and Technical Writing
Develop documentation narrative
Document data use and storage
Develop online help for users

General Information and Concepts
Apply general design and programming concepts
Identify various hardware platforms and run-time environments
Identify human aspects in information systems
Identify general information technology (IT) definitions and terms
Adhere to best programming practices and methodologies
Exhibit understanding of data hierarchy, access methods, and manipulation

Written Assessment:

Administration Time: 3 hours
Number of Questions: 166

Areas Covered:

15%	Analyze Programming Problems and Flowchart Solutions
13%	Design Program Solutions
19%	Code Programs
14%	Test Programs
7%	Maintain Programs
8%	Complete User Documentation and Technical Writing
24%	General Information and Concepts

Sample Questions:

Data that is represented in a tagged-format language is
A. delimited
B. fixed-length
C. XML
D. binary

Large programs used by many different people should be stored on a
A. server
B. personal computer
C. DVD drive
D. tape backup

Each module in top-down programming should
A. be well distributed
B. represent a loop
C. represent a program function
D. contain a procedure call

Test data should be developed that will
A. execute the program properly the first time
B. validate the operating system
C. contain only invalid data
D. generate the answers wanted by users

Documentation standards should be
A. changed frequently
B. defined up front
C. dictated by the end users
D. determined by the programmer

Computer Programming (continued)

The requirements, design, implementation, and testing phases are part of the
A. programming phase sequence
B. software development life cycle
C. extreme programming development
D. linear design phase

A structured code walk-through
A. ensures that the code follows in-house standards
B. ensures that there are sufficient lines of code
C. increases the user friendliness of the program
D. should only be performed by the original programmer

Compile errors can be caused by bad syntax, typing errors, or
A. input data
B. incorrect user specification
C. illegal function calls
D. insufficient test data

One technique for handling runtime errors gracefully to prevent the application from crashing is to
A. make use of exception handling
B. use an interpreter not a compiler
C. limit user input and output
D. compile the code a second time

The process of laying out a web page on poster board is called
A. outlining
B. storyboarding
C. copying
D. processing

Performance Assessment:

Administration Time: 3 hours
Number of Jobs: 2

Areas Covered:

61% **Write a Program**
Participants will use correct information and date for customer orders for Susan Smith, Reshay Thompson, and George Jackson, get cumulative information, label columns, enter data accurately, and set up output form correctly.

39% **Design Solution Logic**
Participants will read input file until End of File, list name and date of birth, count the number of people, calculate the age of each person, calculate the average age of the group, produce a summary line, and produce a hard copy of the logic flow diagram.

Sample Job: *Design Solution Logic*

Maximum Job Time: 30 minutes

Participant Activity: The participant will be provided a programming situation. Create a flowchart or pseudocode that solves the programming situation (problem definition).