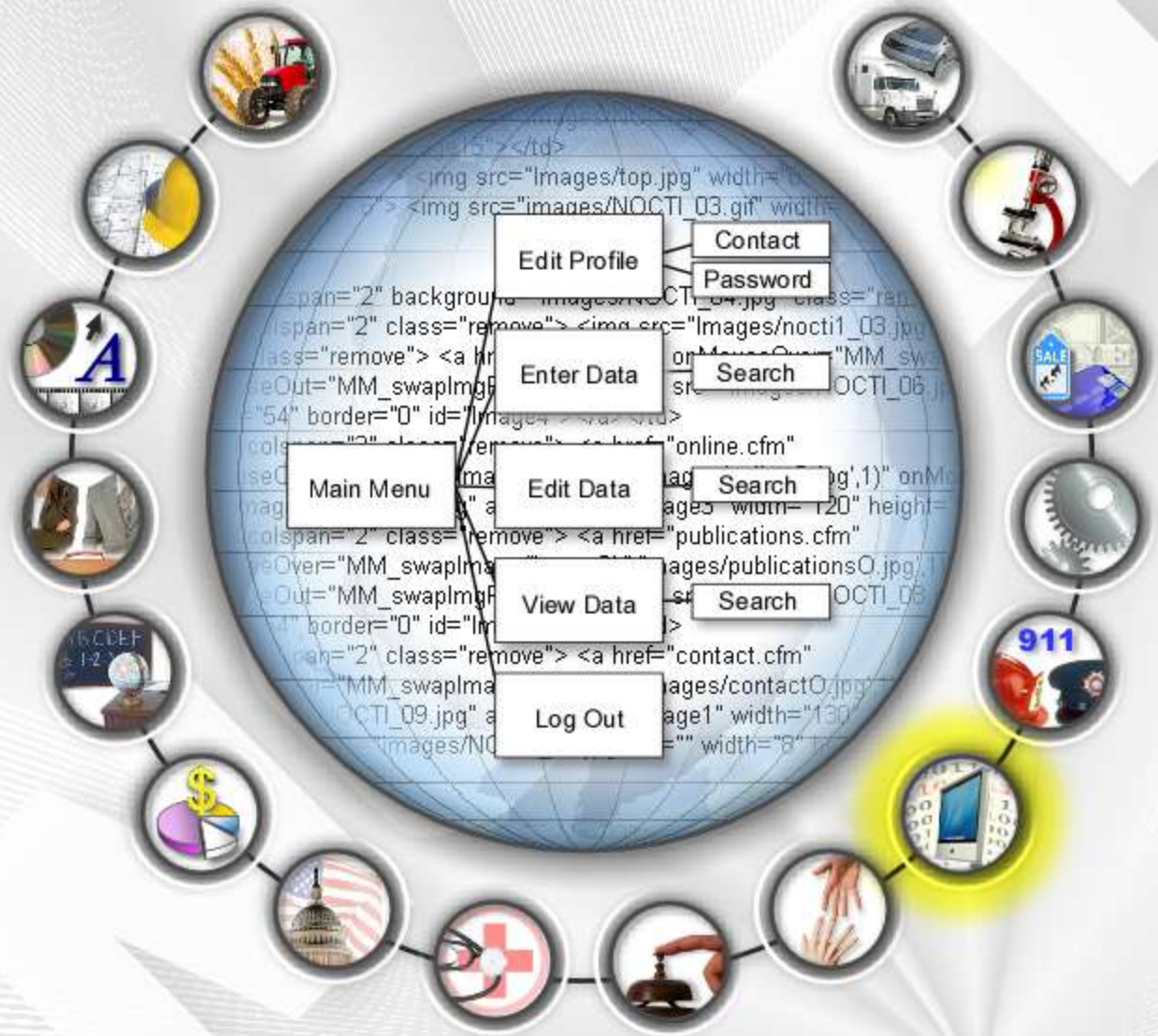




Job Ready Assessment Blueprint

Computer Programming



Test Code: 4023 / Version: 01

“Measuring What Matters”

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

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

Specific Competencies and Skills (continued):

Maintain Programs

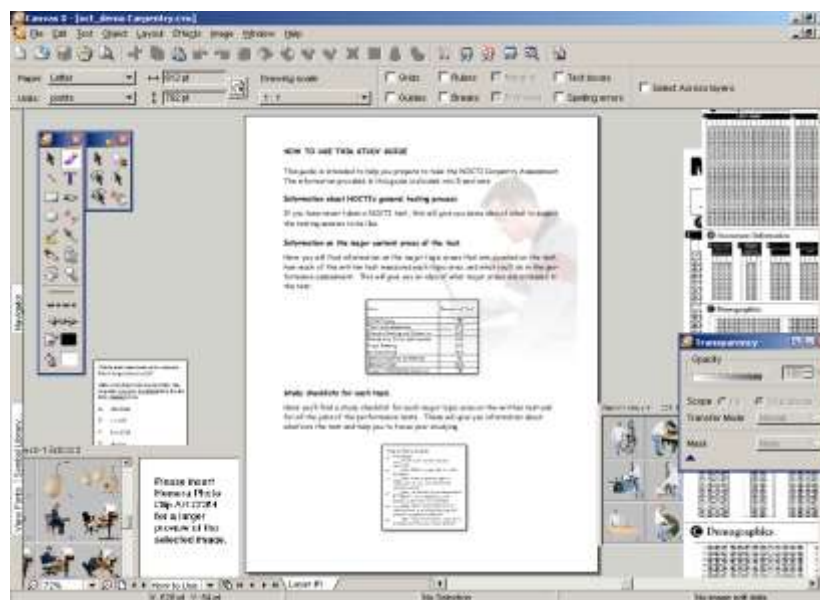
- Change existing programs when requirements change
- Correct existing program errors
- Update documentation for existing programs
- Provide user instructions on program modifications

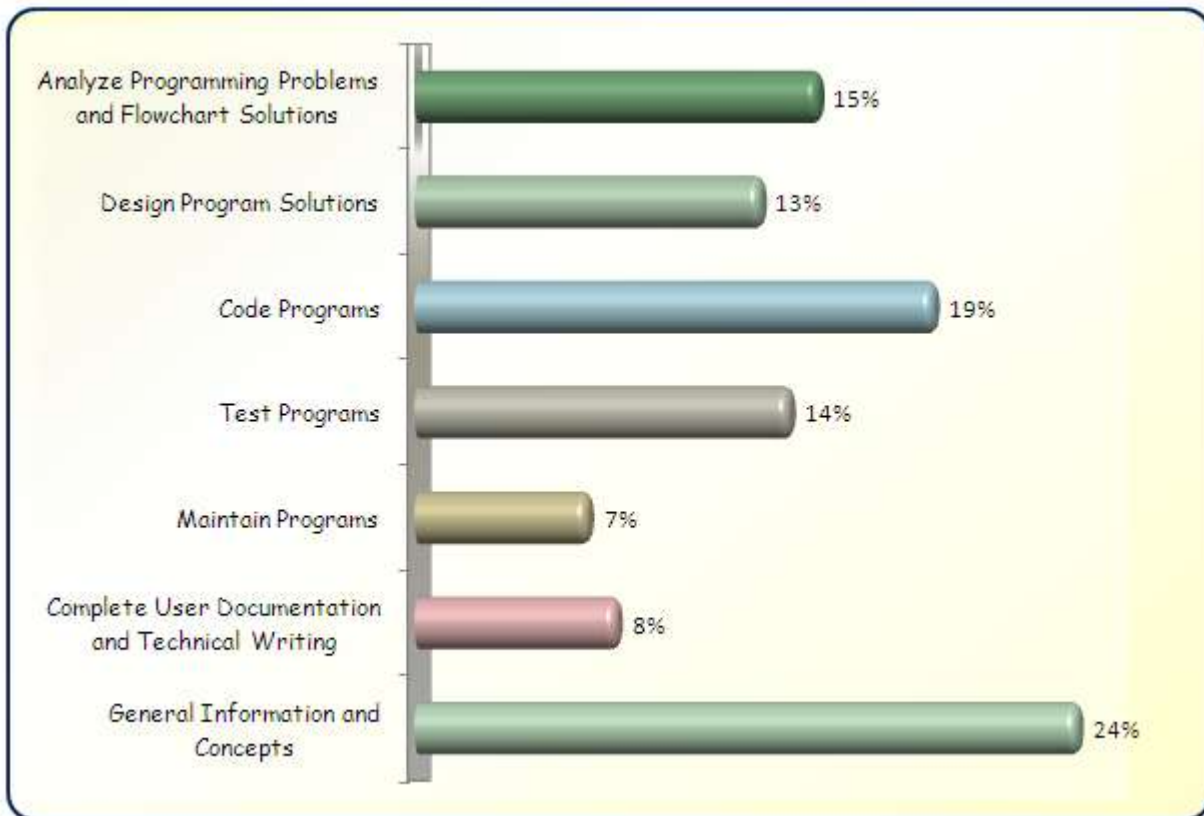
Complete User Documentation and Technical Writing

- Develop documentation narrative
- Define 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:**

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

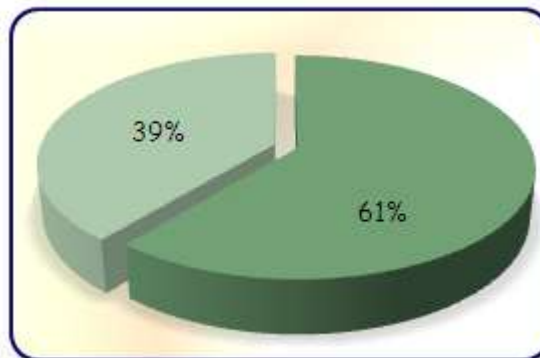


Performance Assessment:**Administration Time:** 3 hours**Number of Jobs:** 2**Areas Covered:****61% Write a Program**

Create an order form to track CD purchases from a website, set up a GUI panel-type form, enter each set of given test data, perform appropriate calculations, display results in a table on the GUI panel, print out source code and output report.

39% Design Solution Logic

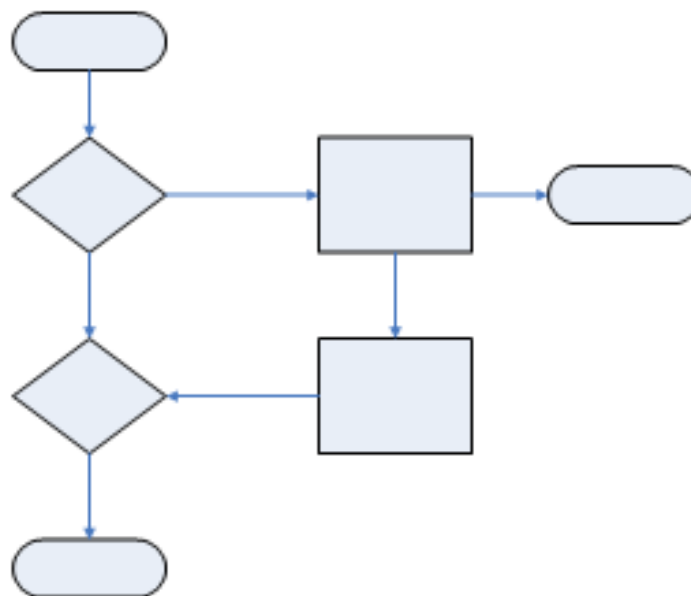
Read the provided programming situation, create a flowchart of pseudocode that solves the programming situation.



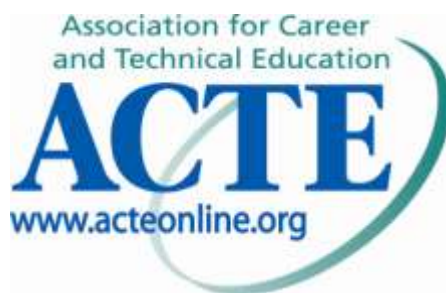
Sample Job: Design Solution Logic

Maximum 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).



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in



career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!