

FUNCTIONAL AREA 2

Legacy Application Development (LAD)

Incumbents in this functional area use software tools and/or programming languages to design, test, and implement properly engineered legacy software solutions to meet the defined business needs of State departments. The application software components will reside on a mainframe and may consist of many interrelated programs.

LEGACY APPLICATION DEVELOPMENT	T	1	2	3
Knowledge of:				
Systems development life cycle management concepts.	X	X	X	X
Basic IT principles and practices, general computer architecture (CPU, memory allocations, peripheral devices. I/O, etc., in order to perform basic programming functions, and basic arithmetic (binary, hexadecimal, etc.).	X	X	X	X
Legacy programming languages (e.g., COBOL, Fortran, Natural, PL/1).	X	X	X	X
Concepts and methods of mainframe programming environments including TSO, ISPF, and CICS	X	X	X	X
Basic concepts of program compilation and linking	X	X	X	X
Job Control Language (JCL) syntax		X	X	X
Batch processing concepts and methods		X	X	X
Mainframe file systems (partitioned and sequential datasets)		X	X	X
Concepts and methods of mainframe data access methods (e.g., VSAM, ISAM)			X	X
Programming methods for retrieving data from Mainframe databases		X	X	X
Legacy programming language debugging concepts and techniques		X	X	X
Concepts and methods of effective Mainframe screen design for interactive applications.		X	X	X
Software testing principles, methods, and tools.		X	X	X
Structured query languages (SQL)		X	X	X
Mainframe utilities (e.g., IEBGENER, FATAR, SyncSort).		X	X	X
Application development principles and methods.		X	X	X
Database management principles and methods on the mainframe			X	X
Comprehensive knowledge of departmental policies and procedures as it relates to IT.			X	X
Terminal emulation software and configuration options			X	X
IT change management practices and their application in the software development environment.			X	X
Interrelationships between legacy applications and networking components.			X	X
Familiarity with IT systems security methods and practices related to legacy application development (e.g., RACF, Natural Security).			X	X
New and emerging application software technologies and industry trends.			X	X
Advanced compiler options and switches				X
Advanced systems development concepts including structured design, supportability, reliability, scalability, maintainability, and survivability.				X
Advanced application software theories, concepts, principles, standards, methods, or practices.				X
Ability to:				
Write simple mainframe program code based upon detailed program specifications.	X	X	X	X
Learn and use standard programming principles	X	X	X	X
Learn and use at least one programming language to develop legacy application code.	X	X	X	X
Present solutions to problems with clarity and precision in written and/or graphic form	X	X	X	X
Write clear and concise narrative statements and draw logical diagrams	X	X	X	X
Learn to detect, analyze, and correct errors in programs	X	X	X	X
Learn additional programming languages	X	X	X	X

Organize applications into logical components		X	X	X
Suggest alternative application development strategies to meet user requirements and constraints		X	X	X
Write detailed program specifications		X	X	X
Write, test, debug, and maintain more complex applications that meet technical and functional requirements.		X	X	X
Analyze information and situations, reason logically and creatively, identify problems, draw valid conclusions, and develop effective solutions		X	X	X
Apply creative thinking in the design and development of methods of processing information with information technology systems		X	X	X
Write JCL to control batch jobs		X	X	X
Design and implement program screens that are easy and efficient to use		X	X	X
Use mainframe utility programs to create datasets, maintain tapes, sort data, etc.		X	X	X
Write SQL statements to select, add, update, and/or delete data stored in a DBMS		X	X	X
Write SQL statements to extract data from a DBMS		X	X	X
Configure a variety of terminal emulation software to meet the programming and application needs of the business.		X	X	X
Develop secure applications that restrict access to confidential, sensitive, and personal data to those individuals with a business need to access this data.		X	X	X
Develop, execute, and evaluate application test plans, scenarios, and scripts.		X	X	X
Participate in the design of new or modified applications.		X	X	X
Perform detailed analysis of applications used to ensure that information provided meets the unit's requirements and expectations. (Question: separation of functional areas)???		X	X	X
Write the most complex legacy application programs			X	X
Ensure applications are consistent with the current and planned infrastructure and data environments.			X	X
Interpret programming policies, standards, and guidelines.			X	X
Plan and carry out difficult and complex application development assignments and develop new methods, approaches, and procedures.			X	X
Provide advice and guidance on a wide range and variety of complex programming issues to management, peers and customers.			X	X
Develop and implement security requirements.			X	X
Provide technical direction/leadership to applications development program or project work.			X	X
Gather data to analyze system utilization, capacity and performance, and incorporate findings in the development and deployment of an application.			X	X
Advise other IT experts throughout the organization on a variety of situations and issues that involve applying or adapting new software theories, concepts, principles, standards, methods, or practices.				X
Develop comprehensive software development plans for cross functional applications.				X
Lead application development teams with authority to initiate and influence key decisions and obtain necessary project resources.				X
Develop new theories, concepts, standards and methodologies in application development.				X
Evaluate and recommend adoption of new or enhanced approaches to the delivery of IT services related to application development.				X
Investigate, analyze, and evaluate project feasibility; develop project cost and benefit estimates; evaluate risks; and estimate resource needs for staff and consultants.				X
Resolve complex problems related to interfaces and connectivity of multiple hardware platforms, operating systems, database management systems, and various other applications.				X
Provide technical guidance concerning system technical constraints, acceptance testing, performance criteria, complex design issues, and complex programming logic.				X
Analyze, define, develop, and implement the department's software design, development, and testing strategies, incorporating advanced security standards.				X

Research emerging technologies and provide guidance to ensure applications are optimized for state-of-the-art technology and functionality.				X
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LEGACY APPLICATION DEVELOPMENT

Information Technology Specialist Trainee, (Legacy Application Development)

Incumbents at this level work under direct supervision applying a basic understanding of information technology and legacy application programming to maintain an assigned module of code for a deployed application and/or modify assigned code according to well-established procedures. Incumbents assist in the development, modification, testing, and/or installation and maintenance of software to support business user applications.

Information Technology Specialist I (Legacy Application Development)

Incumbents apply a comprehensive understanding of legacy application development principles and methods. This level works under direct technical supervision to write applications, according to technical specifications, using one or more of the legacy programming languages and utilities/tools to meet business requirements. Incumbents have authority to plan, design, code, test and implement software development tasks, independently, within a clear framework established by the supervisor.

Information Technology Specialist II (Legacy Application Development)

Incumbents take an independent, lead technical role within a legacy application development area. Incumbents demonstrate proficiency of business and technical IT competencies, with a specialization in legacy application development. Incumbents apply knowledge of the organization’s technology and business infrastructure to perform the full-range of duties to effectively develop, modify, test, install and maintain complex in-house developed software. Incumbents take responsibility for analyzing and translating technical specifications into integrated applications that automate business processes and execute the life cycle change process to implement design changes in response to changes in customer functional requirements.

Technical decisions, recommendations and specifications are developed at this level based on analytical data and business requirements. The system development life cycle and change management processes are utilized to provide structure to the planning, implementation and deployment of new software to minimize impacts to the customer.

Information Technology Specialist III (Legacy Application Development) Range A

At the advanced Range A level, incumbents demonstrate extensive knowledge of the legacy application development process for mainframe platforms, often in diverse and/or distributed IT environments. They serve in a lead capacity and direct the work of assigned staff and/or serve as expert specialists who work independently and deal with the most complex and business critical integrated enterprise software applications.

Incumbents evaluate the feasibility of new systems design methodologies that best meet the business requirements and recommend the adoption of the most promising new methodologies. They interpret software development standards to develop complex applications for mainframe platforms. At this level, they are required to lead the development of alternative solutions to ensure applications optimize technology and functionality to best meet a department's business needs. They also provide technical guidance concerning system technical constraints, acceptance testing, performance criteria, complex design issues, and complex programming logic. In addition, they resolve complex problems related to interfaces and connectivity of multiple hardware platforms, operating systems, database management systems, and various other applications.

Information Technology Specialist III (Legacy Application Development) Range B

Incumbents perform the State's most complex IT application development and direct major state-wide projects or are responsible for multiple business critical applications in legacy programming environments and platforms. Incumbents function as architects for large, extremely complex enterprise-wide legacy software applications typically found in either large departments or data center IT environments. Incumbents make decisions or recommendations to establish state or department-wide standards, policies, and practices for legacy software development, requirement analysis, reusability of systems and/or components, and performance metrics. Incumbents use in-depth experience and expertise of methods, paradigms and tools to advance software development practices for the State or department. They apply superior leadership skills to direct large project development teams and negotiate and interact with consultants. Incumbents use their broad understanding of the business and organization structure to predict and manage time, cost and capital expenditures related to these projects.