

National Compensation Survey on Information Technology Professionals Index of Classifications Surveyed - 2004

IT MANAGEMENT

- 5. Chief Information Technology Executive
- 10. IT Director
- 15. IT Manager, Single Location
- 20. IT Manager, Corporate Organizations
- 25. Manager, Application Systems Analysis / Programming And Operating Systems Programming
- 30. Manager, Computer Operations and Operating Systems Programming
- 35. Manager, Application Systems Analysis / Programming

APPLICATION SYSTEMS ANALYSIS & PROGRAMMING

- 40. Applications Systems Analyst / Programmer, Supervisor
- 45. Applications Systems Analyst / Programmer, Specialist
- 50. Applications Systems Analyst / Programmer, Senior
- 55. Applications Systems Analyst / Programmer, Intermediate

APPLICATIONS PROGRAMMING

- 60. Applications Programming Supervisor
- 65. Applications Programmer, Specialist
- 70. Applications Programmer, Senior
- 75. Applications Programmer, Intermediate
- 80. Applications Programmer, Entry-Level (Trainee)

OPERATING SYSTEMS PROGRAMMING

- 85. Operating Systems Programming Supervisor
- 90. Operating Systems Programmer, Specialist
- 95. Operating Systems Programmer, Senior
- 100. Operating Systems Programmer, Intermediate

APPLICATION SYSTEMS ANALYSIS

- 105. Application Systems Analysis Supervisor
- 110. Application Systems Analyst, Specialist
- 115. Application Systems Analyst, Senior
- 120. Application Systems Analyst, Intermediate
- 125. Application Systems Analyst, Entry-Level

MAINFRAME PROGRAMMING

- 127. Mainframe Programmer, Senior
- 128. Mainframe Programmer, Intermediate

DEVELOPERS

- 130. Application Developer, Team Leader
- 135. Application Developer, Specialist
- 140. Application Developer, Senior
- 145. Application Developer, Intermediate

DATABASE MANAGEMENT & DEVELOPMENT (RDBMS)

- 150. Database Manager
- 155. Database Administrator
- 157. Data Architect
- 160. Database Administrator / Oracle
- 165, 180, 195. Database Analyst / Programmer, Specialist (Oracle, Microsoft SQL Server, Other)
- 170, 185, 200. Database Analyst / Programmer, Senior (Oracle, Microsoft SQL Server, Other)
- 175, 190, 205. Database Analyst / Programmer, Intermediate (Oracle, Microsoft SQL Server, Other)

NETWORK OPERATIONS / ADMINISTRATION

- 210. Computer Operations Manager
- 215. Computer Operations Supervisor
- 220. Systems Administrator
- 224. Unix Administrator, Senior
- 225. Unix Administrator
- 230. LAN Operations Manager
- 235. LAN Administrator / Manager, Single Facility
- 240. WAN Administrator / Manager
- 245. LAN Analyst II
- 250. LAN Analyst I
- 251. Network Planning Manager
- 252. Network Planning Analyst, Sr.
- 253. Network Planning Analyst, Intermediate
- 255. Network Engineer, Senior
- 260. Network Engineer, Intermediate
- 265. Network (LAN/WAN) Support Technician, Senior
- 270. Data Security Manager
- 275. Data Security Analyst
- 280. Help Desk Manager
- 290. Help Desk Coordinator, Senior
- 295. Help Desk Coordinator, Intermediate

PROFESSIONAL IT CLASSIFICATIONS

- 299. Business Analyst, Leader
- 300. Business Analyst, Senior
- 305. Business Analyst, Intermediate
- 309. PC Manager
- 310. PC Specialist
- 315. PC Trainer
- 320. PC Software Specialist
- 325. Project Manager
- 390. Technical Support Analyst
- 395. Operations Scheduler / Coordinator
- 400. Data Entry Supervisor

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ENTERPRISE RESOURCE PLANNING

- Oracle & PeopleSoft
- 330, 360. Project Manager, Enterprise Resources Planning (ERP) Systems
 - 335, 365. Business Analyst, Specialist, Enterprise Resources Planning (ERP) Systems
 - 340, 370. Business Analyst, Senior, Enterprise Resources Planning (ERP) Systems
 - 345, 375. Systems Analyst / Programmer, Specialist, Enterprise Resources Planning (ERP) Systems
 - 350, 380. Systems Analyst / Programmer, Senior, Enterprise Resources Planning (ERP) Systems

TELECOMMUNICATIONS SERVICES

- 405. Director of Telecommunications Services
- 410. Telecommunications Services Manager
- 415. Telecommunications Operations Manager, Data & Voice Communications
- 420. Telecommunications Programmer / Systems Analyst, Specialist
- 425. Telecommunications Programmer / Systems Analyst, Senior
- 430. Telecommunications Programmer / Systems Analyst, Intermediate
- 435. Telecommunications Technician III
- 440. Telecommunications Technician II
- 445. Telecommunications Engineer / Analyst, Senior
- 450. Telecommunications Engineer / Analyst, Intermediate
- 455. Voice Analyst
- 460. Data Communications Analyst

SOFTWARE ENGINEERING & QUALITY ASSURANCE

- 465. Software Engineer, Project Leader (Staff)
- 470. Software Engineer, Staff Specialist
- 475. Software Engineer, Senior
- 480. Software Engineer, Intermediate
- 485. Software Engineer, Entry Level
- 490. Software / Systems Design Engineer, Project Leader (Staff)
- 495. Software / Systems Design Engineer, Staff Specialist
- 500. Software / Systems Design Engineer, Senior
- 505. Software / Systems Design Engineer, Intermediate
- 510. Software / Systems Design Engineer, Entry Level
- 515. Software Quality Assurance Engineer, Specialist
- 520. Software Quality Assurance Engineer, Senior
- 525. Software Quality Assurance Engineer, Intermediate

CLIENT / SERVER CLASSIFICATIONS

- 530. Client Server Systems Development Manager
- 535. Client Server Systems Development Team Leader
- 540. Client Server Systems Administrator
- 545. Client / Server Analyst / Programmer, Senior
- 550. Client / Server Analyst / Programmer, Intermediate

WEB-OPERATIONS

- 555. President, E-Operations
- 560. Vice President, E-Operations
- 565. Business Development / Marketing, E-Operations
- 570. Manager, E-Operations
- 575. Manager, E-Marketing
- 580. Director, Internet Software, Engineering Ops.
- 585. Internet Information Architect, Senior
- 587. Web Manager
- 590. Web Project Manager
- 595. Website Engineer
- 600. Web Network Administrator
- 605. Head Of Web Content Internet Security Administrator
- 615. Research Manager, E-Operations
- 620. Research Analyst, E-Operations
- 625. Web Graphics Designer, Senior
- 630. Web Graphics Designer, Intermediate
- 635. Web Developer, Specialist
- 640. Web Developer, Senior
- 645. Web Developer, Intermediate
- 650. E-Commerce Development, Director
- 655. E-Commerce, Project Lead
- 660. E-Commerce, Specialist
- 665. Webmaster
- 670. Webmaster Assistant

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IT Management

5. CHIEF INFORMATION TECHNOLOGY EXECUTIVE - Responsible for integrating long-term corporate-wide information needs with data processing activities including systems analysis, programming, and computer and auxiliary operations. Develops overall corporate IT strategy including needs, systems development, and hardware/software acquisition and integration. Identifies new computer technology and determines their applicability to the organization's long-term needs. Oversees corporate policies and procedures, technical standards, methods, and priorities. May have direct day-to-day management responsibilities for data processing plans, projects, performance, and related matters. Oversees all IT functions at the division, subsidiary, or regional data processing centers. Position is usually found in a large organizations and usually reports to the CEO or the COO.
10. IT DIRECTOR - Responsible for all corporate information technology activities including systems analysis, programming, and computer and auxiliary operations. Under a broad corporate plan, develops policies, procedures, technical standards, methods, and schedules. Oversees the strategic relationship between information technology and other functions within the organization. Maintains the organization's awareness of developments in information technology and computer hardware and software for the formulation of long- and short-range plans for the acquisition and implementation of new equipment and techniques. Reports to management on information technology plans, projects, performance and related matters. Directs and provides functional direction to middle IT managers in a division, subsidiary, or region. Typically, this position reports to the chief information technology executive. In small- and mid-sized organizations, may be the top IT position reporting to a top-level executive position.
15. IT MANAGER, SINGLE LOCATION - Responsible for managing the day-to-day IT operations for a single unit firm or division including systems analysis, programming, and computer and auxiliary operations. Directs the development and maintenance of timeliness and quality standards for all aspects of the data processing operation. Determines and recommends department budgets and analyzes controllable expenditures. May plan and coordinate the evaluation and effectiveness of existing data processing applications and the feasibility and potential value of new applications. Typically, this position is the IT head for single unit organizations and reports to an executive-level position.
20. IT MANAGER, CORPORATE ORGANIZATIONS - Responsible for managing IT operations including systems analysis, programming, and auxiliary operations of an organization's major division or branches. Directs the development and maintenance of timeliness and quality standards for all aspects of the data processing operation. Determines and recommends department budgets and analyzes controllable expenditures. May plan and coordinate the evaluation and effectiveness of existing data processing applications and the feasibility and potential value of new applications. Position typically reports to a director or a VP.
25. MANAGER, APPLICATION SYSTEMS ANALYSIS / PROGRAMMING AND OPERATING SYSTEMS PROGRAMMING - Is responsible for all systems analysis, applications programming, and operating systems programming. May have subordinate supervisors in charge of any or all of these functions. Is responsible for establishing priorities and schedules for the development of data processing applications and for the developing and maintaining standards for systems analysis and programming. Responsible for directing all technical efforts, which lead to the successful configuration between software systems, hardware configuration, and application programs. May be responsible for, or participate in, the evaluation of new computer hardware and software systems to determine the feasibility of installation.
30. MANAGER, COMPUTER OPERATIONS AND OPERATING SYSTEMS PROGRAMMING - Responsible for all equipment operations and related aspects of data processing as well as the operating systems programming function, but is not responsible for systems analysis or applications programming. Subordinate functions may include computer operations, data entry, data control, and scheduling. May also have subordinate supervisors in charge of any or all of these functions. Supervises, either directly or indirectly through a subordinate supervisor, the development, modification, and maintenance of systems software (general-purpose programs such as control systems, compilers, utility routines, etc.) Provides technical support to applications programmers in the use and the effective interface with the operating system. May be responsible for or participate in the evaluation of new computer hardware and software systems to determine feasibility of installation.
35. MANAGER, APPLICATION SYSTEMS ANALYSIS / PROGRAMMING - Responsible for all systems analysis and application programming in a data processing installation, but does not have responsibility for the supervision of operating systems programming. May have subordinate supervisors in charge of systems analysis and applications programming functions. Is responsible for the establishment of priorities and schedules for the development of data processing applications and for the maintenance of standards for systems analysis and applications programming.

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Application Systems Analysis & Programming

40. APPLICATIONS SYSTEMS ANALYST / PROGRAMMER, SUPERVISOR - Provides supervisory activities, which involve systems analysis and programming including personnel, schedules, and progress audits. Will oversee projects that deal with one or more highly specialized applications of system analysis and programming. Based on equipment, personnel, and technical requirements, will coordinate the necessary resources to obtain desired results. Formulates/defines system scope and objectives. May lead in the preparation of detailed specifications from which programs will be written. Has full technical knowledge of all phases of applications systems analysis and programming. May be responsible for monitoring budget and expenditures, and within limits, may approve expenditures outside budget. May have quality assurance review responsibilities.

45. APPLICATIONS SYSTEMS ANALYST / PROGRAMMER, SPECIALIST - Provides expert technical direction to projects that deal with one or more highly specialized applications of system analysis and programming. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Formulates/defines system scope and objectives. Prepares detailed specification from which programs will be written. Responsible for program design, coding, testing debugging, and documentation. Has full technical knowledge of all phases of applications systems analysis and programming. May be responsible for multiple phases of a project. May have responsibilities relative to instructing, directing, and checking the work of other application systems analysts and programming personnel. May have quality assurance review responsibilities.

50. APPLICATIONS SYSTEMS ANALYST / PROGRAMMER, SENIOR - Under general direction, prepares, and defines system objectives and scope. Responsible for devising or modifying procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and business objectives. Prepares detailed specifications from which programs will be written. Will design, code, test, debug, and document programs. Able to work at the highest technical level of all phases of applications system analysis and programming activities. Regularly provides guidance and training to less experienced analysts/programmers.

55. APPLICATIONS SYSTEMS ANALYST / PROGRAMMER, INTERMEDIATE - Under general supervision, prepares and defines system objectives and scope. Will assist in research and fact-finding to develop or modify information technology. Typically, this position has a broad understanding of the end product (application). Will assist in preparing detailed specifications from which programs will be written. Will design, code, test, debug, and document programs. Incumbents in this position will generally have responsibility for only specific aspects of a project. May require guidance on complex projects and usually does not deviate from set policies or procedures.

Application Programming

60. APPLICATIONS PROGRAMMING SUPERVISOR - Supervises employees engaged in developing, maintaining, and modifying applications programs. Is responsible for scheduling, assigning, and coordinating the work of subordinate programmers and for verifying the maintenance of programming quality standards. Directs the training of subordinates in programming techniques. May work with systems analysts or other technical personnel in establishing time schedules and priorities for development of data processing applications. May have responsibility for all or most of the programming functions.

65. APPLICATIONS PROGRAMMER, SPECIALIST - Applies a comprehensive body of knowledge to all phases of application programming. Plans, conducts, schedules, and may provide technical direction to the work of a group of application programmers. Provides training for entry-level programmers and evaluates/recommends changes in procedures, when necessary. May act as a liaison between departments. Has comprehensive technical knowledge of all phases of applications programming. Typical responsibilities may include directing and checking the work of other applications programmers. May have quality assurance review responsibilities. Exclude those performing systems analysis.

70. APPLICATIONS PROGRAMMER, SENIOR - Under general direction and considering computer equipment capacity and limitations, operating time, and form of desired results, develops and modifies applications programs of a high degree of complexity and scope. Designs, codes, tests, debugs, and documents those programs. May carry-out or participate in problem analysis and system design preparatory for the development of programs. May advise on operating problems of assigned programs. May give some technical assistance to lower classifications. Competent to work at the highest technical level of all phases of applications programming activities. Exclude those performing systems analysis.

75. APPLICATIONS PROGRAMMER, INTERMEDIATE - Under general supervision, works from basic systems designs and specifications and uses standard procedures and techniques to maintain, modify, and devise new or existing applications programs of moderate complexity and scope. Prepares flow charts, writes machine instructions and procedures for computer operators, debugs, and documents programs. May assist higher-level programmers in the development of programs of a more complex nature. Work assignments at this level are aimed more at production than training, but work is still subject to regular checks by higher levels. Exclude those performing systems analysis.

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80. APPLICATIONS PROGRAMMER, ENTRY-LEVEL (TRAINEE) - Under immediate supervision, modifies application programs from detailed specifications. Will code, test, debug, document, and maintain programs. Receives formal training and on-the-job instruction in conjunction with a progression of increasingly more difficult work assignments involving the flow-charting, coding, debugging, and documentation of application programs. Carries-out work assignments designed to prepare him/her for promotion to the next level of application programming. Ordinarily does not remain in this category more than 18 months and usually moves to the next level considerably sooner, based on skills development. Exclude those performing systems analysis.

Operating Systems Programming

85. OPERATING SYSTEMS PROGRAMMING SUPERVISOR - Supervises employees engaged in developing, modifying, and maintaining software (as opposed to applications) programs. Must have a thorough knowledge of current techniques and hardware capabilities to schedule and direct the work of employees who work on modifications and maintenance of the computer operating system. Develops such general-purpose software programs as compilers, utility routines, etc. and provides technical support in the effective use of software to applications programmers. May carry-out or direct the evaluation of new computer hardware and software systems to determine feasibility of installation. May be responsible for development of programming standards. This is a first-level exempt supervisory classification.

90. OPERATING SYSTEMS PROGRAMMER, SPECIALIST - Applies a comprehensive body of knowledge to all phases of operating systems programming of a high degree of complexity and scope. Is usually responsible for formulating specifications for applications dealing with the complete operating system including sophisticated file maintenance routines, large telecommunications networks, computer accounting, and advanced mathematical/ scientific software programs. Responsibilities typically include program design, coding, testing, debugging, and documentation. May plan the technical schedule and oversee the work of a group of operating systems programmers. May carry-out or participate in feasibility studies relative to new hardware or software systems and the implementation of such systems. May have quality assurance review and/or new and existing software product evaluation responsibilities.

95. OPERATING SYSTEMS PROGRAMMER, SENIOR - Under general direction, applies thorough knowledge to formulate and define specifications for complex operating software programming applications that may include modifications to existing applications. Is competent to work at the highest technical level on all phases of operating systems programming applications; may have responsibilities for evaluating new and existing software products. Responsible for program design, coding, testing, debugging, and documentation. Is concerned with achieving the most efficient use of available hardware through effective use of software programs and routines. May evaluate available software and make recommendations concerning purchase of software packages or development of in-house programs.

100. OPERATING SYSTEMS PROGRAMMER, INTERMEDIATE - Under general supervision, maintains and modifies existing operating systems programs. Typically works on such general-purpose operating programs such as utility programs, job control language, macros, subroutines, and related control modules. May work with new software operating programs of moderate complexity and scope and provide continuing technical support to applications programmers in making the most efficient use of such software. Responsibilities include program design, coding, testing, debugging, and documentation. May develop and secure acceptance for standards and common procedures for software systems.

Application Systems Analysis

105. APPLICATION SYSTEMS ANALYSIS SUPERVISOR - Supervises employees engaged in the analysis of administrative, scientific, or engineering functions and the subsequent design of systems involving electronic data processing applications to perform these functions. Responsible for scheduling, assigning, and coordinating the work of subordinate systems analysts. Also responsible for coordinating and maintaining liaison with the various operating units affected by systems studies as well as verifying the quality of studies performed by subordinates and for directing their training in techniques of systems analysis. May work with programming supervisors and other technical personnel in establishing time schedules and priorities for development of data processing applications. May have responsibility for all or only a part of the systems analysis function.

110. APPLICATION SYSTEMS ANALYST, SPECIALIST - Formulates, organizes, and provides technical direction to major projects involving all phases of application systems analysis. Will formulate, design, and guide systems analysis implementation projects while taking the capacity and limitation of the equipment, operating time, and form of desired results into consideration. Prepares detailed specifications from which programs will be written. Analyzes and revises existing system logic difficulties as necessary. Has full technical knowledge of all systems analysis activities, which may include instructing, directing, and checking the work of other systems analysis personnel. May also provide quality assurance reviews. Exclude supervisors with permanent responsibility of a particular department.

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115. APPLICATION SYSTEMS ANALYST, SENIOR - Under general direction, plans and performs the analysis of major company activities and guides the subsequent design and implementation of systems for the application of electronic data processing or for the improvement of existing data processing applications. Is concerned primarily with the broad aspects of data processing systems with the objective of utilizing available personnel resources and computer hardware and software to provide the information that is most useful to the company in the most efficient manner. Is concerned with the interaction between systems, not only to avoid redundancies in storage and processing, but also to take advantage of new and more effective ways of providing needed information. May occasionally train and guide the work of less experienced analysts, but this function is incidental to specific projects.

120. APPLICATION SYSTEMS ANALYST, INTERMEDIATE - Under general supervision, studies specific administrative, scientific, or engineering functions to determine, define, and formulate the applicability of new or modified application programs. Identifies all aspects of the assigned problem and evaluates user requirements in terms of the capabilities of the available hardware and software. Develops proper documentation that outlines the logical steps to be followed in solving the problem and prepares systems specifications including input and output formats. Able to work in most aspects of application systems analysis in accordance with acceptable practices standards.

125. APPLICATION SYSTEMS ANALYST, ENTRY-LEVEL - Under direct supervision, assists in determining the relevance of computer programs relative to specific administrative, scientific, and engineering functions or problems. Assists senior-level analysts in preparing detailed specifications from which programs will be written. Will also assist in the analysis and revision of existing system logic difficulties and documentation, as necessary. Carries-out progressively more difficult assignments involving the compiling, summarizing, and analysis of data concerning the function or problem being studied. May prepare flow charts to outline the existing process or the proposed solution to the problem.

Mainframe Programming

127. MAINFRAME PROGRAMMER, SENIOR - Under general direction and considering computer equipment capacity and limitations, operating time and form of desired results, develops and modifies applications programs of a high degree of complexity and scope. Develops, encodes, tests, debugs, documents, and installs programs for large-scale or high volume transactions requiring IBM/MVS or similar mainframe processing. Prepares program specifications and diagrams and develops coding logic flowcharts. Develops programs in languages such as COBOL and CICS or fourth-generation business-oriented languages. Competent to work at the highest technical level of all phases of programming.

128. MAINFRAME PROGRAMMER, INTERMEDIATE - Under general supervision, works from basic systems designs and specifications and uses standard procedures and techniques to maintain, modify, and devise new or existing applications programs of moderate complexity and scope. Develops, encodes, tests, debugs, documents, and installs programs for large-scale or high volume transactions requiring IBM/MVS or similar mainframe processing. Prepares program specifications and diagrams and develops coding logic flowcharts. Develops programs in languages such as COBOL and CICS or fourth-generation business-oriented languages. Work assignments at this level are aimed more at production than at training, but work is still subject to regular checks by higher levels.

Developers

130. APPLICATION DEVELOPER, TEAM LEADER - Leads other developers by providing direction on the development of new or existing business needs. Provides top technical expertise in the development, modification, and implementation of software systems designed to support new or existing business needs. Assigns personnel to projects, directs their activities, and evaluates their work. Projects are of significant complexity and require considerable experience in managing/leading large-scale development efforts. Oversees development projects from concept to implementation using solutions in multi-platform environments including object oriented applications, languages, and third party tools such as GUI (C/C++), CASE, and RAD client/server-based tools and comparable applications. Has responsibility for all phases of a project and regularly audits the progress of teams.

135. APPLICATION DEVELOPER, SPECIALIST - Based on project requirements, provides top technical expertise in the development, modification, and implementation of software systems designed to support new or existing business needs. Projects are usually of considerable complexity and require a mastery of developmental tools. Based on a thorough analysis of the project and considering staff, equipment, and deadlines, develops solutions from concept to implementation using object oriented applications, languages, and third party tools such as GUI (C/C++), CASE, and RAD client/server based tools and comparable applications. Has responsibility for all technical phases of a project and regularly audits the progress of senior-level and less-experienced staff members.

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140. APPLICATION DEVELOPER, SENIOR - Under general direction, is responsible for the development, modification, and implementation of software systems designed to support new or existing business needs. Projects are usually of considerable complexity and require a mastery of developmental tools. Based on analysis, develops multi platform solutions using object oriented applications, languages, and third party tools such as GUI (C/C++), OOP, CASE, and RAD client/server based tools and comparable applications. Typically, works in all phases of a project and may review work of less experienced staff members.

145. APPLICATION DEVELOPER, INTERMEDIATE - Under general direction, is responsible for the development, modification, and implementation of software systems designed to support a new or existing business. Assignments are usually of a fairly complex nature and require working mastery of developmental tools. Based on analysis, assists in the formulation of the concept and the implementation of solutions in multi-platform environments using object oriented applications, languages, and third party tools such as GUI (C/C++), OOP, CASE, and RAD client/server based tools and comparable applications. Typically works in most phases of a project but work is subject to review by senior staff.

Database Management & Development (RDBMS)

150. DATABASE MANAGER - Responsible for all functions associated with the efficient management/administration of computerized databases either through supervisors or technical staff. Directs various projects and their activities to staff. Reviews and evaluates staff's work and prepares performance reports. Consults with and advises staff on administrative policies and procedures, technical problems, priorities, and methods. Instructs and advises database users of the various administration and technical issues in conjunction with other IT managers. Responsible for preparing activity and progress reports regarding the database management section. As a rule, this position is not an administrative position. Incumbents exercise control over database functions through subordinates; therefore, excluded are those with no functional subordinates. (For Database manager with no functional subordinates, see Job 155, DATABASE ADMINISTRATOR.)

155. DATABASE ADMINISTRATOR - Responsible for all activities related to the administration of computerized databases including design, control, and maintenance. Analyzes information requirements and develops specifications for database construction and maintenance to ensure economy, efficiency, safety of information, and utilization of new technical developments. Based on the project and on a limited basis, assigns various projects to personnel and directs their activities. Reviews and evaluates personnel's work and prepares performance reports. May confer and advise system analysts and subordinates on administrative policies and procedures, technical problems, priorities, and methods and of new or existing data files. May project long-range requirements for database administration in conjunction with other managers in the data processing function. Normally reports to the IT Manager.

157. DATA ARCHITECT - Under general supervision, designs and constructs relational databases for data warehousing. Defines, develops, and builds dimensional databases. Translates business needs into long-term architecture solutions, examines the acquisition, access, and design of data, handles the archive, recovery, and load strategy design and implementation procedures. Responsible for developing data warehousing blueprints, evaluating hardware and software platforms, and integrating systems. Coordinates new data integration with existing warehouse structure. Evaluates reusability of current data for additional analyses and cleans system of old, unused, or duplicate data. Examines object and data models and the metadata repository to configure the data for efficient use and quick access. Incumbents usually have 2 to 4 years of experience.

160. DATABASE ADMINISTRATOR / ORACLE - Responsible for all functions associated with the efficient design, implementation and maintenance of Oracle databases. Analyzes business application requirements and develops specifications for database construction and maintenance. Has considerable experience and knowledge with installation, configuration management, security, backup and recovery procedures. Additional duties consist of data modeling, normalization, and vendor interface. Maintains and documents all production databases and interface systems and resolves database performance problems. Provides database support services for critical computer applications. Has knowledge and experience in system design and analysis, client-server architecture, along with relevant technical knowledge of the latest Oracle release (Vx).

For the following three classifications, report the job codes listed in Guide A corresponding to the platform being used.

SEE JOB CODE GUIDE A - DATABASE ANALYST / PROGRAMMER, SPECIALIST - Under minimal direction, applies a comprehensive body of knowledge to all phase of database development. Designs, implements, and maintains extremely complex databases with respect to JLC, access time, access methods, device allocation, validation checks, organization, protection and security, documentation, guidelines, and statistical methods. Provides top technical direction to support user/business needs, developmental efforts, and the project/department team. Provides direction to solutions involving all database activities including physical structure, functional capabilities, security, and back-up/recovery specifications. Additional areas of responsibility also include the maintenance of database dictionaries, the overall monitoring of standards and procedures, and the integration of systems through database design. Incumbents in this position have the highest competency to work in all database functions.

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SEE JOB CODE GUIDE A - DATABASE ANALYST / PROGRAMMER, SENIOR - Under general direction designs, implements, and maintains extremely complex databases with respect to JLC, access time, access methods, device allocation, validation checks, organization, protection and security, documentation, guidelines, and statistical methods. Examines and coordinates database requirements of the user, the capabilities of databases, data security, and data back-up/recover specifications. Will maintain database dictionaries, monitor standards and procedures, and integrate systems through database design.

SEE JOB CODE GUIDE A - DATABASE ANALYST / PROGRAMMER, INTERMEDIATE - Under general supervision, designs, implements, and maintains complex databases relative to JLC, access time, access methods, device allocation, validation checks, organization, protection and security, documentation, guidelines, and statistical methods. Examines and coordinates database requirements of the user, the applications programmer, and the operators. May recommend solutions requiring the knowledge of the physical structure and the functional capabilities of databases, data security, and data back-up/recovery specifications. May maintain databases dictionaries, monitor standards and procedures, and the integration of systems through database design.

JOB CODE GUIDE A	DATABASE →	Oracle	Microsoft SQL Server	Other
Database Analyst / Programmer, Specialist		165	180	195
Database Analyst / Programmer, Senior		170	185	200
Database Analyst / Programmer, Intermediate		175	190	205

Network Operations / Administration

210. COMPUTER OPERATIONS MANAGER - Responsible for all equipment operation and related aspects of data processing in a computer installation, but does not have responsibility for systems analysis, programming, or operating systems programming. Subordinate functions may include computer operations, data input, and data control and scheduling. May also have subordinate supervisors in charge of any or all of these functions. Is responsible for coordinating these functions to meet approved standards of quality and timeliness.

215. COMPUTER OPERATIONS SUPERVISOR - Supervises personnel engaged in setting up and operating stored program computers and peripheral equipment. Is responsible for solving operating problems and insuring compliance with established methods, procedures, and standards of operation. May be responsible for scheduling jobs and equipment maintenance to achieve maximum use of equipment. Directs training of subordinates in operation of equipment used. May be responsible for all or only part (such as one shift) of computer operations. This is a first-level exempt supervisory classification. Typically reports to the computer operations manager.

220. SYSTEMS ADMINISTRATOR - Provides system support to the activities and resources required to provide quality computer operations processing and applications system resource management and availability. Will set-up and implement standards for computer operations and use software support tools to process scheduling, reports, report generation, database administration, system data backups, performance tuning, and security. Will troubleshoot and resolve problems associated with local and wide area network environments. Responsible for dealing with hardware and software vendors as well as technical support issues. Will troubleshoot PC software, coordinate with help desk, and set connections to broadband/baseband networks. Extensive experience with software and systems administration including communication hardware designed to maintain wide area networks. Knowledge of TCP/IP networking and operating environments such as Unix and Windows NT. May have lead responsibilities in the upgrade of equipment. Included are those with responsibilities for overseeing small, multi-user systems (e.g., AS/400, Windows NT Servers, HP3000, etc.).

224. UNIX ADMINISTRATOR, SENIOR - Oversees the operational and programming needs of a UNIX system including maintenance, upgrading, and configuration within wide area network (WAN) architecture. Will configure UNIX boxes, establish and develop standards, and evaluate hardware and software products. Performs system and network programming and software maintenance including back-up/recovery and security administration. Has extensive knowledge with shell and kernel level programming. Additional duties include troubleshooting, networking, and operating system problems and training and supporting end-users and lower-level Unix administrators.

225. UNIX ADMINISTRATOR - Responsible for installing, maintaining, and upgrading UNIX operating systems. Configures UNIX boxes, establishes standards, and evaluates hardware and software products. Performs system and network programming and software maintenance including back-up/recovery and security administration. Is typically familiar with shell and kernel level programming. Additional duties may include troubleshooting, networking, and operating system problems as well as training and supporting end-users.

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230. LAN OPERATIONS MANAGER - Has overall management responsibility of PC/LAN operations for a group of branches or locations including operations, analysis, programming, and procurement. Develops and implements policies, procedures, and standards and ensures their conformance with information technology and company objectives. Directs the enhancement of the system to meet organizational needs. Will determine and recommend the procurement of hardware, software, and telecommunications equipment consistent with the company's system needs and in coordination with the MIS department. Competent with network operating systems, applications, and developmental tools including network management applications, database applications, CASE, compilers, and commercial software. Provides leadership in the effective use of internal data processing automated office systems and data communications. Incumbent is usually in charge of a multi location PC/LAN operation(s) and typically reports to a MIS executive or vice president. Exclude those with responsibilities outside a PC/Network environment.

235. LAN ADMINISTRATOR / MANAGER, SINGLE FACILITY - Responsible for managing the PC/LAN operations of a single facility including installation, documentation, administration, technical services, and procurement. Directs the development and enhancement of the system to meet the needs of the organization. Responsible for determining and recommending the procurement of hardware, software, and telecommunications equipment consistent with the company's system needs and in coordination with the MIS department. Develops and implements policies, procedures, and standards and ensures their conformance with information technology and company objectives. Extensive knowledge of network operating systems, applications, and development tools including network management applications, database applications, CASE, compilers, and commercial software. Extensive experience with LAN hubs, fiber optics, bridges, routers, universal cabling, gateways, etc. This is the head PC/LAN position for a single facility or the top position in the facility of a multi-location company.

240. WAN ADMINISTRATOR / MANAGER - Responsible for administering wide area networks including installation, documentation, technical services, and procurement of hardware and software. Will direct the development and enhancement of the system to meet the needs of the organization including procedures for disaster recovery, back-ups and archiving, troubleshooting, and resolution of hardware, software, and network problems. Will determine and recommend the procurement of hardware, software, and telecommunications equipment consistent with the company's system needs and in coordination with the MIS department. Develops and implements policies, procedures, and standards and ensures their conformance with information technology and company objectives. Extensive knowledge and familiarity with WAN routing protocols such as SLIP and X.25 and hardware such as routers, hubs, and multiplexers.

245. LAN ANALYST II - Under general direction, provides senior-level technical and administrative direction to the firm's local area network. Experience with PC LAN/WAN design, maintenance, implementation, and administration. Monitors established network policies, procedures, and standards to ensure conformance with information technology and company's objectives. Performs lead activities between technical staff and system's users and follows management direction in the enhancement of the system to meet the needs of the organization. May determine and recommend the procurement of hardware, software, and telecommunications equipment consistent with the company's system needs. Has extensive knowledge of network operating systems, applications, and development tools including network management applications, database applications, CASE, compilers, and commercial software. Has extensive experience with LAN hubs including servers, fiber optics, bridges, routers, universal cabling, and gateways. Does not have management responsibilities or the setting of general MIS policies. This is the highest non-management level in the LAN job family.

250. LAN ANALYST I - Under general supervision, is responsible for supporting the organization's network including hardware and software installation and setup, technical maintenance, and user support and documentation. Will troubleshoot network problems and coordinate preventative maintenance of equipment. Will provide network installation, support, and disaster recovery services. Responsibilities include the analysis of user requirements and installation of the appropriate technical solutions. Has working knowledge of network operating systems, applications, and development tools including network management applications, database applications, CASE, compilers, and related commercial software. Has working knowledge of network protocols and microcomputer architecture. Technical support for computer hardware is limited to preventive maintenance, but is not ordinarily responsible for the repair of equipment. May recommend the purchase, maintenance, or modification of the system. Not responsible for ALL network operations and usually reports to a senior- or management-level position.

251. NETWORK PLANNING MANAGER - Based on the organization's long-term strategic network needs, is responsible for planning, developing, and installing current and future network systems. Will ensure that network capacity meets current and future network requirements by planning for remote hardware and communications facilities, developing and implementing system analysis methodologies, installation, and support, and by ensuring integration compatibility between new hardware products and the existing network. Develops, maintains, and communicates project plans and schedules, prioritizes requirements, and coordinates human and financial resources. May oversee network planning analysts responsible for defining and developing the methodology to ensure compatibility of all software and hardware products at each facility. Generally reports to senior-level manager planning manager and/or telecommunications.

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252. NETWORK PLANNING ANALYST, SENIOR - Under general direction, plans, monitors and evaluates the performance of complex network systems and makes recommendations for improvement/upgrades. Provides highly skilled technical support in network planning, engineering, architecture, and in the resolution of network problems. Will develop technical guidelines and interface applications, identify and evaluate new products, and resolve network problems of considerable complexity. May be responsible for identifying, evaluating, and recommending the acquisition of new hardware and software. May interface with vendors. May have lead responsibilities of projects involving less-experienced network planning analysts. Typically has a bachelor's degree in CS or related field, plus 5 to 8 years of related experience.

253. NETWORK PLANNING ANALYST, INTERMEDIATE - Under general supervision, plans and evaluates moderately complex existing network systems and makes recommendations for resources to maintain and/or expand service levels. Provides assistance in network planning, engineering, architecture, and the development of technical standards and interface applications. Will assist in developing technical guidelines and interface applications. May assist more experienced planning analysts in the evaluation of new products and evaluate new products, as assigned. Resolves routine network problems usually referring more complex issues to senior-level analysts. Typically has a bachelor's degree in CS or related field plus 3 to 5 years of related experience.

255. NETWORK ENGINEER, SENIOR - Under general direction, is responsible for the technical design, configuration, and implementation of local and wide area network solutions between multiple platforms including ongoing technical support to remote area networks, Internet, and EDI communications. Has thorough knowledge of multi-protocol systems and extensive implementation experience with multi-vendor network systems. Is responsible for troubleshooting network usage, workstations, and computer peripherals. Will develop and implement policies and standards and ensures adherence to security procedures. In addition to a B.A. degree, incumbents usually have special certification such as CNE or equivalent and over 5 years of experience.

260. NETWORK ENGINEER, INTERMEDIATE - Under general supervision, is responsible for the technical design, configuration, and implementation of local and wide area network solutions between multiple platforms including ongoing technical support to remote area networks, Internet, and EDI communications. Possesses extensive knowledge of multi-protocol systems and implementation experience with multi-vendor network systems. Responsible for troubleshooting network usage, workstations, and computer peripherals. In addition to a B.A. degree, incumbents usually have special certification such as CNE or equivalent and 3 to 4 years of experience.

265. NETWORK (LAN/WAN) SUPPORT TECHNICIAN, SENIOR - Provides technical maintenance and recovery support to the firm's local or wide area networks. Will use a variety of testing tools and techniques to troubleshoot and resolve complex technical problems associated with the system's hardware and software. Will interface with vendors and maintenance providers to service and maintain the system, implement necessary measures to limit the system's downtime, and provide technical support to optimize system performance. Is fully trained with network protocols (IPX/SPX and TCP/IP) and has working knowledge of programming languages (C, C++, Visual Basic), operating systems, and environments. Excluded are those incumbents with significant responsibility for the systems development and installation.

270. DATA SECURITY MANAGER - Develops, directs, and implements policies and procedures to protect the firm's information technology assets from deliberate or accidental modification, disclosure, or destruction. Responsible for recommending and implementing procedures, policies, and security clearance for users to gain access to information system assets. Will design appropriate measures to minimize security breaches including data recovery and back-up procedures. Will schedule assignments, personnel, and operations and will direct all activities. Will continuously review and evaluate staff's performance and prepare performance reports.

275. DATA SECURITY ANALYST - Under limited supervision, will implement security procedures to protect the firm's system from deliberate or accidental access, disclosure, or destruction. May analyze user needs and/or coordinate recommendations for new and improved security measures. Will design appropriate security procedures among users and document and train personnel on such matters. Will coordinate back-up and recovery procedures. Usually provides status reports to management and to appropriate personnel.

280. HELP DESK MANAGER - Will manage the organization's help desk department to ensure that technical problems are resolved promptly with a minimal amount of user inconvenience. Monitors staff and their resolution of user problems to ensure optimum user-system performance. Will implement the necessary administrative procedures to monitor, log, and track technical problems and/or user difficulties. Typically, this position takes part or is the lead person in the evaluation of software/hardware used by the help desk group. Will prepare reports related to department activities, system functionality, and staff performance. Exclude those who simply lead the department by their ability to resolve the more technical problems.

290. HELP DESK COORDINATOR, SENIOR - Under general supervision, is responsible for supporting the timely process through which system problems are controlled. Will isolate, resolve and follow-up with end-users to resolve MIS problems of a high-level of complexity. Typically, this position has limited discretion to resolve problems that fall outside normal areas of expertise. May elevate problems of unusual complexity to lead or management-level personnel. May involve the use of a problem management database and help desk systems. May provide guidance/training to less experienced personnel.

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295. HELP DESK COORDINATOR, INTERMEDIATE - Under general supervision, will assist users in resolving problems through diagnoses and discussion of the particular problem. Will take the necessary steps to recognize the problem, research, isolate, and resolve the problem. Can typically resolve problems of a moderate level of complexity referring more difficult problems to senior-level personnel.

Professional IT Classifications

299. BUSINESS ANALYST, LEADER - Under general direction and acting as a member of a project team, directs and checks the work of other business systems analysts. Works with functional groups within IT and internal business clients to develop short- and long-term system plans. Provides technical guidance concerning the business implications of the application of various systems. Directs the planning, implementation, and execution of business-specific technology plans. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operation time, and form of desired results. Ensures that internal customers' needs analysis is in alignment with business initiatives. Incumbents usually have complete technical knowledge of most phases of systems analysis and business implications of the application of technology to the current and future business environment. Usually requires at least 6 to 8 years of related progressive experience.

300. BUSINESS ANALYST, SENIOR - Plans and performs analysis of major company activities and/or functions and guides the subsequent design and implementation or improvement of existing data processing-based business systems applications. Utilizes available personnel resources and resources from the computer system to analyze information, methods, systems, and procedures to determine the most useful business solutions to the company. Is concerned with the interaction between systems to take advantage of new and more effective ways of providing needed information. Will analyze, interpret, and make recommendations in the form of formal proposals and/or presentations to senior executives. Depending on the assignment, will perform proactive activities related to the completion and implementation of a project. May occasionally train and guide the work of less-experienced analysts, but this function is incidental to specific projects. Fully competent to work at the highest level of all phases of business analysis. Typically has a bachelor's degree in one of the following areas: information technology, finance, computer science, or related. Usually requires at least 5-6 years of related progressive experience. Exclude systems auditors or systems analysts.

305. BUSINESS ANALYST, INTERMEDIATE - Plans and performs analysis of major company activities and/or functions and guides the subsequent design and implementation or improvement of existing data processing-based business systems applications. Utilizes available personnel and computer system resources to analyze information, methods, systems, and procedures to determine the most useful business solutions to the company. Is concerned with the interaction between systems to take advantage of new and more effective ways of providing needed information. Will analyze, interpret, and make recommendations in the form of formal proposals and/or presentations to senior executives. Depending on the assignment, will perform proactive activities related to the completion and implementation of a project. May occasionally train and guide the work of less-experienced analysts, but this functions is incidental to specific projects. Able to work in most aspects of business analysis in accordance with acceptable practices and standards. Typically has a bachelor's degree in one of the following areas: information technology, finance, computer science, or related. Usually requires at least 3-4 years of related progressive experience. Exclude systems Auditors or systems analysts.

309. PERSONAL COMPUTER (PC) MANAGER - Responsible for managing the organization's microcomputer (PC) activities, including hardware and software between all user departments and company locations. Based on needs assessment, personnel, software, equipment, facilities, budgets, and user requirements, makes recommendations to management and establishes and implements PC policies, procedures, and standards and ensures their conformance with information systems goals and procedures. Coordinates the training for end-users on hardware and related software and oversees the design, coding, and testing of documentation and the implementation of micro applications and support. Oversees the implementation and enforcement of security procedures and makes recommendation to enhance the effective use of internal data processing, automated office systems, and data communications. Typically reports to the IT VP or senior director.

310. PC SPECIALIST - Under general supervision, performs analysis and administrative tasks in the planning, design, and installation of new and existing personal computer-based systems. Possesses and applies a comprehensive knowledge of PCs to develop procedures and analyze needs relating to the systems' software and hardware. Is responsible for software packages and systems development that meet overall departmental and organizational goals. Capable of working on moderately complex applications. Writes programs to fulfill requirements or selects appropriate off-the-shelf software and modifies to suit. Trains users and operators and may schedule and supervise project work. Ordinarily reports to a manager or information technology management. Exclude those who have LAN administration responsibilities.

315. PC TRAINER - Coordinates, administers, and conducts training programs designed to educate an organization's PC users about specialized applications of micro/minicomputer systems. Monitors the level of employee advancement and evaluates the effectiveness of the program. Assesses the requirements necessary for effective training. Prescribes outside training, as required.

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320. PC SOFTWARE SPECIALIST - Under general direction, is responsible for all activities relating to the evaluation, analysis, and setup of PC-based software products (e.g., word processors, spreadsheets, presentation graphics, database management systems, electronic mail, and communications). Determines products for compatibility, flexibility, and ease-of-use including the design of application options/screens with mainframe applications. May have some administrative responsibilities such as training, security, systems back-ups, and data recovery operations. May assist in the development and customization of software products to meet user and/or organizational needs. May prepare the necessary documentation for product development and for training needs. Excluded are those who provide hardware technical support or those who have significant programming/development responsibilities.

325. PROJECT MANAGER - Oversees various systems projects of significant magnitude in terms of complexity, cost, time-constraints, internal and external staffing, and equipment including software and hardware. Will provide direction to a project team including the assignment of individual responsibilities, tasks, and technical functions. Will identify needs and allocate the appropriate resources to meet the timely completion of specific project tasks. Will continually monitor individual progress to insure meeting of specific deadlines. Possesses a broad-knowledge of most technical resources and uses them to effectively coordinate team members and resources. Will confer with senior MIS or administrative management regarding changes of significant consequences to the scope or schedule of the project. Given the life-cycle of most projects, most assignments usually last more than three months. Excluded are outside consultants and incumbents that may perform the above functions on a part-time basis.

Enterprise Resource Planning

For the following six classifications, report the job codes listed in Guide B that corresponds to the platform being used.

FOR JOB CODE, SEE GUIDE B - PROJECT MANAGER, ENTERPRISE RESOURCES PLANNING (ERP) SYSTEMS - Under corporate direction, this staff position leads the technical and functional efforts associated with an enterprise resource planning system. Based on needs analysis, will lead project teams in the implementation or maintenance of customized functional solutions that meet corporate-wide needs in areas such as finance, human resources, distribution, manufacturing, etc. Provides direction to a project team including assignment of individual responsibilities, tasks, and technical functions. Coordinates and actively participates in all stages of project development including research, design, programming, testing, and implementation. Confers with lead functional and technical personnel and coordinates changes of significant consequences to the scope or schedule of the project. Assesses project deadlines by continually monitoring individual progress. Possesses extensive knowledge and experience of most technical resources and uses them to effectively coordinate team members and resources. Acts as the key liaison among all functions, the implementation team, information technology department, and the software vendor. Exclude outside consultants and incumbents that may perform the above functions on a part-time basis.

FOR JOB CODE, SEE GUIDE B - BUSINESS ANALYST, SPECIALIST, ENTERPRISE RESOURCES PLANNING (ERP) SYSTEMS - Plans and performs the analysis of major company activities and/or functions and guides the subsequent design and implementation or improvement of existing ERP systems. Using advanced concepts and techniques, analyzes information, methods, systems, and procedures to determine the most useful business solutions to the company. Studies and tests the interaction between systems to take advantage of new and more effective ways of providing needed information. Will analyze, interpret, and make recommendations as formal proposals and/or presentations to senior executives. Depending on the assignment, will perform proactive activities related to the completion and implementation of a project. Usually directs and guides the work of less-experienced analysts. Fully competent to work at the highest level in all phases of business analysis. Typically has a bachelor's degree in one of the following areas: information technology, finance, computer science, or related. Usually requires at least 6 years of related progressive experience. Excludes systems auditors or systems analysts.

FOR JOB CODE, SEE GUIDE B - BUSINESS ANALYST, SENIOR, ENTERPRISE RESOURCES PLANNING (ERP) SYSTEMS - Under general direction, plans and performs the analysis of major company activities and/or functions and guides the subsequent design and implementation or improvement of existing ERP systems. Performs non-standard procedures to analyze information, methods, systems, and procedures to determine the most useful business solutions to the company. Will analyze, interpret, and make recommendations to senior IT managers. Usually trains and guides the work of less-experienced analysts, but this function is incidental to specific projects. Is competent to work in most phases of business analysis. Typically has a bachelor's degree in one of the following areas: information technology, finance, computer science, or related. Usually requires at least 4 to 6 years of related progressive experience. Exclude systems auditors or systems analysts.

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FOR JOB CODE, SEE GUIDE B - SYSTEMS ANALYST / PROGRAMMER, SPECIALIST, ENTERPRISE RESOURCES PLANNING (ERP) SYSTEMS - Under minimal direction, plans and performs analysis to guide the subsequent design and implementation or improvement of an ERP system. Based on needs assessment and corporate direction, develops information and data requirements and translates them into systems designs including tables, panels, and reports. During the implementation phase, may develop plans and programs to convert the existing data to the new system. Interfaces with the department and other systems providers to resolve conversion and/or production issues. Responsible for requirement analysis and design specifications. May serve as a project coordinator and act as an active participant at all stages of development including research, design, programming, testing, and implementation. Reviews and approves documentation for the system and communicates any procedural changes to appropriate staff members. Has extensive experience with leading edge technologies including, but not limited to, client-server technology, RDBMS, C/C++, and Oracle. May occasionally direct the work of less-experienced programmer analysts, but this function is incidental to the job. Works at the highest technical level of all phases of applications system analysis activities. Usually has quality assurance responsibilities.

FOR JOB CODE, SEE GUIDE B - SYSTEMS ANALYST / PROGRAMMER, SENIOR, ENTERPRISE RESOURCES PLANNING (ERP) SYSTEMS - Under general direction, plans and performs analysis to guide the subsequent design and implementation or improvement of an ERP system. Based on needs assessment and corporate direction, develops information and data requirements and translates them into system designs including tables, panels, and reports. During the implementation phase, may develop plans and programs to convert the existing data to the new system. Interfaces with the IT department and other systems providers to resolve conversion and/or production issues. Responsible for requirement analysis and design specifications. Formulates/defines systems scope and objectives and usually participates in most stages of development including analysis, panel design, programming, testing, and implementation. Writes and may review document procedures from less-experienced staff members. Has considerable experience with leading edge technologies including, but not limited to, client-server technology, RDBMS, C/C++, and Oracle. Follows documented or established procedures to perform quality assurance activities.

FOR JOB CODE, SEE GUIDE B - DATABASE ADMINISTRATOR, ENTERPRISE RESOURCES PLANNING (ERP) SYSTEMS - Responsible for all activities related to the administrator of database applications relative to an ERP system. Typical responsibilities include directing and evaluating personnel and resources to projects, developing policies and procedures for database testing implementation, assessing current and future needs making recommendations for ERP grades, and performing database table maintenance. Will develop policies and procedures to administer databases including table definitions, structures, and logical views. Administers all data dictionary naming conventions and standards. Monitors systems performance and database access impacts. Manages all database access privileges. Supports disaster recovery and storage capacity requirements. Has knowledge of logical and physical database design principles and concepts plus a strong knowledge of RDBMS technology on host and PC-based platforms.

JOB CODE GUIDE B	ERP System →	Oracle	PeopleSoft
Project Manager, Enterprise Resources Planning (ERP) Systems		330	360
Business Analyst, Specialist, (ERP) Systems		335	365
Business Analyst, Senior, (ERP) Systems		340	370
Systems Analyst / Programmer, Specialist, (ERP) Systems		345	375
Systems Analyst / Programmer, Senior, (ERP) Systems		350	380

390. **TECHNICAL SUPPORT ANALYST** - Analyzes, troubleshoots, repairs, and maintains the computer system, terminal network, and peripheral equipment. Performs routine preventative maintenance on all computer system equipment. Responsible for the maintenance repair of data transmitting equipment such as transmitters, receivers, time emitters, and other specialized equipment. Utilizes diagnostic programs and electronic test equipment. Does not include manufacturing technicians or field service customer representatives.

395. **OPERATIONS SCHEDULER / COORDINATOR** - Under general direction, schedules the operating time of MIS operations to attain maximum utilization of equipment and assure the timely delivery of computer output to customers. Will coordinate MIS operations with data entry, computer support, and computer operations. May coordinate preventative maintenance requirements with operating schedules. May track operating costs, efficiency reports, and operating reports to prepare operating reports for management and to monitor computer schedules.

400. **DATA ENTRY SUPERVISOR** - Supervises and directs the work of data entry employees relative to schedule, allocation of work and assignments, and performance checks to minimize errors and maximize output. Maintains and updates files related to data entry jobs and assists in determining more efficient data entry procedures. Due to the level of responsibility, typically has the authority, within certain guidelines to operate department budget and for initiating personnel actions. Exclude data entry personnel with only lead responsibilities.

Telecommunications Services

405. DIRECTOR OF TELECOMMUNICATIONS SERVICES - Under corporate direction, sets the direction of all telecommunications activities, including the strategic planning and design of voice, data, video, and image telecommunications systems throughout the organization. Interfaces with corporate information technology staff to coordinate telecommunications software, hardware, and systems capabilities including client server architectures. Formulates broad plans and recommends long- and short-range changes to the telecommunications systems. Responsible for preparing cost estimates relative to current and proposed telecommunications activities. Coordinates with subordinates administrative and technical policies and procedures, technical problems, priorities, and methods. Usually reports to VP or senior-level executives.

410. TELECOMMUNICATIONS SERVICES MANAGER - Based on customer needs, resources, and objectives, manages the day-to-day telecommunications activities including planning and maintenance of voice and data, video, and image telecommunications systems. Will allocate the necessary resources in support of telecommunications strategic and tactical planning and interfaces with customers, vendors, and corporate managers. Responsible for department resource allocations. Coordinates with subordinates' administrative and technical policies and procedures, technical problems, priorities, and methods. Typically reports to a director or a VP.

415. TELECOMMUNICATIONS OPERATIONS MANAGER, DATA & VOICE COMMUNICATIONS - Oversees all operational aspects of both data and voice network(s). Based on corporate direction, manages the technical analysis of complex software, hardware, and transmission systems and oversees the development of project plans for the implementation of new telecommunications technology and systems. May supervise, on a line or functional basis, the activities and operations of remote locations. Directs the activities of reporting managers, supervisors, analysts, and technicians and coordinates with vendors involved in providing communication activities. Typically reports to a telecommunications manager or director.

420. TELECOMMUNICATIONS PROGRAMMER / SYSTEMS ANALYST, SPECIALIST - Formulates, organizes, and provides lead technical direction to software-related projects involving corporate-wide telecommunications services. Oversees technical planning, development, and implementation to improve productivity and minimize costs. Has a strong knowledge of communications protocols, hardware, and real time operating systems. Will develop and test communication interface programs of unusual complexity requiring a high-level of proficiency in the use of most programming languages applicable to telecommunications. Position usually requires substantial in-depth knowledge of communications protocols, hardware, and real time operating system programming. Provides technical guidance pertaining to front-end devices, communications simulation, and queuing analysis. Competent to work at the highest level of all phases of telecommunications.

425. TELECOMMUNICATIONS PROGRAMMER / SYSTEMS ANALYST, SENIOR - Under general direction, provides programming and systems analysis support to the planning, administration, and implementation of corporate-wide telecommunications services. Will develop and test complex communications software interface programs requiring a high-level of proficiency in the use of most programming languages applicable to telecommunications. Experienced in communications protocol, hardware, and real time operating system programming. Provides technical guidance pertaining to front-end devices, communications simulation, and queuing analysis. Competent to work at the highest level of all phases of telecommunications.

430. TELECOMMUNICATIONS PROGRAMMER / SYSTEMS ANALYST, INTERMEDIATE - Under general supervision, provides programming and systems analysis support to planning, administration, and implementation of corporate-wide telecommunications services. Within set guidelines, will develop and test communications software interface programs. Has working proficiency in the use of most programming languages applicable to telecommunications equipment. Provides technical guidance pertaining to front-end devices, communications simulation, and queuing analysis.

435. TELECOMMUNICATIONS TECHNICIAN III - Under minimal supervision, is responsible for performing complex tasks typically relating to network monitoring, operations, installation, and/or maintenance for local, site, and/ or remote locations. Serves as a technical lead on a functional basis, providing a resource of strong expertise for the resolution of complex network problems. Depending on assignment, may have lead responsibilities.

440. TELECOMMUNICATIONS TECHNICIAN II - Under general supervision, is responsible for moderately complex tasks typically relating to network monitoring, operations, installation, and/or maintenance. Handles routine network problems. This is typically considered an intermediate-level position.

445. TELECOMMUNICATIONS ENGINEER / ANALYST, SENIOR - Under general direction performs tasks and activities of considerable complexity relative to the design, maintenance, or implementation of telecommunications of voice and data networks. Supports, upgrades, modifies, and troubleshoots voice and data communications systems and networks. Has extensive in-depth knowledge and experience with network protocols as well as installing and supporting routers, switches, hubs, and gateways. Typically has a B.S. or equivalent and a minimum of 5 years technical telecommunications experience.

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450. TELECOMMUNICATIONS ENGINEER / ANALYST, INTERMEDIATE - Under general supervision, performs tasks and activities of considerable complexity relative to the design, maintenance, or implementation of telecommunications voice and data networks. Supports, upgrades, modifies, and troubleshoots voice and data communications systems and networks. Has considerable knowledge and experience with network protocols as well as installing and supporting routers, switches, hubs, and gateways. Typically has a BS or equivalent and 3 years of technical telecommunications experience.

455. VOICE ANALYST - Under general supervision, will provide full technical support to the organization's hardware and software voice communication system. Will design voice networks including the integration of telephone hardware and network services. Supports systems development in intensive applications such as Interactive Voice Response (IVR) and Call Centers. Experience in traffic engineering and carrier management activities. Understands network hardware and is familiar with PBX and ACD systems planning.

460. DATA COMMUNICATIONS ANALYST - Under general supervision, will install, maintain, and troubleshoot data networks including power, software, communications machinery, lines, modems, and terminals. Will utilize a variety of hardware and network tools to control and optimize network resources. Will assist users with problems related to connectivity. Will conduct data flow analysis and monitor and configure, as necessary, the performance of modems, DSUs, multiplexers, and routers. May perform on-going maintenance.

Software Engineering & Quality Assurance

USE THE FOLLOWING LEVEL GUIDE TO REPORT SOFTWARE AND SOFTWARE SYSTEMS DESIGN ENGINEERS, USE THE

Make sure to use the appropriate job code to report your data		GUIDE C - LEVEL GUIDE FOR SOFTWARE ENGINEERS & SOFTWARE / SYSTEMS DESIGN ENGINEERS
Job Codes for Software Engineers	Job Codes for Software/ Systems Design Engineers	
465	490	PROJECT LEADER (Staff) - Based on a general objective, leads specific projects with specific set budgets and durations. Will formulate and define the overall direction of the project or assignment. Has duties instructing, directing and renewing the work of other operating systems programming personnel. Has full technical knowledge of all phases of project development or in the modification efforts of new or existing software. May have quality assurance review responsibilities that may include the evaluation of new and existing software products. Engineers in this classification ordinarily have a M.S. or higher degree in computer science (or equivalent). Does not include outside consultants.
470	495	STAFF SPECIALIST - Top technical contributor in most phases of project development or in the modification efforts of new or existing software. Based on a general objective, formulates and defines the overall technical direction of the project or assignment. Has full technical knowledge of most phases of software systems programming applications. May have quality assurance review responsibilities that may include the evaluation of new and existing software products. Engineers in this classification ordinarily have an M.S. or higher degree in computer science (or equivalent).
475	500	SENIOR - Under general direction, works on variety of complex assignments that are typically delegated in terms of objectives rather than specific instructions or priorities. Typically has responsibility for applications dealing with the overall operating system. Competent to work at the highest technical level on all phases of the software systems programming applications. May provide guidance or assistance to lower level engineers in the effective use of the system's technical software. May have quality assurance review responsibilities that may include new and existing software products. Engineers in this classification ordinarily have a B.S. or M.S. in computer science (or equivalent).
480	505	INTERMEDIATE – Under general supervision and with some latitude for unreviewed action, works from specifications to assist in the development or modification of moderately complex software programming applications. Will test and modify software but will require guidance in other phases such as design and development. Engineers in this classification ordinarily have a B.S. in computer science (or equivalent).
485	510	ENTRY LEVEL – Under close supervision, works from specifications and assists in developing and modifying operating software programming applications. Assignments are generally routine in nature. Typically assists higher-level engineers. Engineers in this classification ordinarily have a B.S. (or equivalent) in a specified area of engineering.

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465 - 485. SOFTWARE ENGINEER (For appropriate job code, use Level Guide C)

Working on the complete life-cycle of the development of a project, may either design or modify sophisticated high-end software programs such as operating systems, network management, database management, high-level languages, and graphical user interfaces. Will design, develop, and test complex systems-level software or modify and maintain existing applications based on engineering releases and utilities from the software manufacturers. Additional responsibilities may include the diagnosis and correction of application/network problems including acting as primary technical contact for vendors. Does not include programmers or analysts who develop or modify operational or applications software programs.

490 - 510. SOFTWARE / SYSTEMS DESIGN ENGINEER (For appropriate job code, use Level Guide C)

Engineers in this category are involved in design engineering and development of computer systems hardware and software. Depending on knowledge and level of experience, is involved in the design, analysis, development, and implementation of software engineering applications or aspects of a project. Will troubleshoot and proceed on resolving hardware software compatibility issues based on systems architecture, project requirements, customer expectations, etc. May be involved in the creation of design specifications and the development and application of utility programs and may resolve hardware/software compatibility problems as they arise. This classification does not include software engineers or those whose primary area of responsibility is limited to hardware design.

515-525. SOFTWARE QUALITY ASSURANCE ENGINEER

In support of a quality assurance program for a software product, will set up and conduct quality tests for highly complex software applications. Will debug and develop test environments and quality plans. Specific responsibilities may include the establishment of software quality standards for life-cycle, documentation, development methods, testing and maintenance, and the development of quantitative measurements and techniques for measuring software quality. May also establish advanced software test standards and methods and conduct complex software tests. May review and evaluate software quality assurance products and services for applicability to in-house needs. For appropriate level, use the experience and requirements listed below:

515. SOFTWARE QUALITY ASSURANCE ENGINEER, SPECIALIST - Top technical contributor in most phases of quality assurance projects. Will plan, organize, and oversee the overall technical plan. Working from generally stated objectives, guides the direction of the project and may also be responsible for scheduling, staffing, and the coordination of resources. Engineers at this level ordinarily have 5 to 8 years of professional experience.

520. SOFTWARE QUALITY ASSURANCE ENGINEER, SENIOR - Under minimal direction, works on complex assignments that are typically delegated in terms of objectives rather than specific instructions or priorities. May provide guidance or assistance to lower-level employees, but is not in a lead position. Engineers in this level ordinarily have 3 to 5 years of professional engineering experience.

525. SOFTWARE QUALITY ASSURANCE ENGINEER, INTERMEDIATE - Under general supervision and with some latitude for unreviewed action, performs assignments that involve responsibility for a secondary project or a part of a major project. Engineers in this classification ordinarily have a B.S. (or equivalent) in a specified area of engineering with 2 to 3 years of professional engineering experience or a master's degree with less job experience.

Client / Server Classifications

530. CLIENT / SERVER SYSTEMS DEVELOPMENT MANAGER - Manages, controls, coordinates, and sets priorities for all systems development activities to ensure task completion. Works with users to achieve clarity of issues, requirements, and priorities and reviews proposed projects for feasibility and functional design. Controls the quality assurance process by establishing processes that ensure the quality of programs and documentation prior to turnover to production. Manages external programming consultants. Develops strategic system direction for the company that coincides with long term priorities and goals. Typically has considerable experience in software/systems development along with client server background and/or relational databases.

535. CLIENT / SERVER SYSTEMS DEVELOPMENT TEAM LEADER - Leads projects by assigning and tracking programming tasks as well as directing the work of lower-level analysts and programmers. Conducts analysis and design and serves as consultant to other database developers. Conducts logical data analysis for decision support and implements integrated solutions. Develops computer programs and conducts validation tests before production approval. Works with users to determine the feasibility and priority of requests. Has proven experience managing development teams and considerable experience with relational database management systems (RDBMS), UNIX, development tools, SQL, and C programming.

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540. CLIENT / SERVER SYSTEMS ADMINISTRATOR - Responsible for the installation of the operating system, new releases and upgrades, and supporting products. Creates and manages user directories and files on client server platform. Monitors, tunes diagnoses, and resolves operating system problems. Develops and maintains a back-up and recovery strategy for all operating systems software. Configures and defines system resources such as terminals, printers, and tape devices. Utilizes administrative subsystems and shell scripts to schedule systems tasks. Studies available software and makes recommendations concerning purchases of software packages from vendors.

545. CLIENT / SERVER ANALYST / PROGRAMMER, SENIOR - Under general direction, works with applications for a client/server architecture. Duties include programming, analysis, systems interface development, and production support. Will apply comprehensive knowledge of client/server technology in the design, implementation, and maintenance of databases and modification of interface applications. Typical responsibilities relative to databases include access methods, access time, data integrity, validation checks, security documentation, and the maintenance of database dictionaries. May have overall supervision of standard procedures and integration based on a client/server design including host-based and client/server on-line and batch environments. Additional responsibilities may include the designing of databases based on user specifications. Competent to work at the highest level of all phases of client/server programming.

550. CLIENT / SERVER ANALYST / PROGRAMMER, INTERMEDIATE - Under general supervision, works with applications for client/server architecture. Duties include programming, analysis, system interface development, and production support. Will apply knowledge of client/server technology in the design, implementation, and maintenance of databases and modification of interface applications. Typical responsibilities relative to databases include access methods, access time, data integrity, validation checks, security documentation, and the maintenance of database dictionaries. May have overall supervision of standard procedures and integration based on a client/server design including host-based and client/server on-line and batch environments. Competent to work in most phases of client/server programming.

Web-Operations

555. PRESIDENT, E-OPERATIONS - Responsible for overall leadership and management of the company's Internet operations and enterprises. Determines the objectives of the organization, formulates plans and policies, and allocates resources for the achievement of these objectives. Has direct P/L responsibility for the firm's e-operations. Organizes the unit and determines the allocation of duties and authorities to subordinates. Exercises controls to see that objectives are achieved in accordance with company policy. Will develop new business ventures through partnerships and alliances with other e-based operations. Incumbents in this position typically have a broad-range of experience in cutting edge e-communications including Web-based technology, e-commerce, and telecommunications. Typically reports to the CEO of a parent company or directly to the Board of Directors.

560. VICE PRESIDENT, E-OPERATIONS - Directs and coordinates the growth activities of the company's e-operations. Is accountable for the full range of operations of the organization by providing operational guidance and analyzing and appraising the effectiveness of all operations. Will promote and guide the organization's e-business operations. Works with other business units to develop new promotional opportunities for the organization's products / services. Has extensive executive and business development experience in cutting edge e-communications including Web-based technology, e-commerce, and telecommunications.

565. BUSINESS DEVELOPMENT / MARKETING, E-OPERATIONS - Will identify and implement new ventures and business opportunities including alliances with other e-businesses, re-assessment of services based on new technology, new products/services, and new markets. Develops business plans to expand the organization's strategic market position, supports new ventures, works with prospective strategic partners, establishes marketing/operations infrastructures, and manages new business consistent with set corporate goals. May oversee and develop business plans for new business unit(s) following a successful startup.

570. MANAGER, E-OPERATIONS - Responsible for the ongoing development, implementation, overall Web strategy, and operations. Will develop business plans, annual budgets, and staffing needs to provide company's products/services through the Web. Oversees operational Web activities focusing on content creation and site maintenance. May develop and coordinate content including Website copy, budget monitoring, legal issues, e-mail response/distribution, and business correspondence with production/developers. Has considerable experience with Web technologies and Web page design including HTML, graphics design, layout, and computer file management.

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575. **MANAGER, E-MARKETING** - Responsible for developing and implementing plans to promote the company's products/services through strategic Web marketing campaigns. Responsible for assisting in the creation and implementation of Web marketing plans. Coordinates closely with design and content management teams to design, develop, and implement online marketing and merchandising programs on a regular and timely basis. Develops marketing policies and programs and coordinates marketing and sales promotions with overall sales and profit objectives. Uses market research techniques to adjust strategies and plans. Typically has a degree in marketing or related field and an understanding of Web technologies.

580. **DIRECTOR, INTERNET SOFTWARE, ENGINEERING OPERATIONS** - Directs the organization's internet software operations by overseeing developers, Webmasters, operating systems administrators, the system's internet connectivity, and the database management system. Will support and provide strategic, operational, and capital planning processes as well as maintain close working relationships with other technology groups. Directs the development of software systems including interactive databases, content production, and advertisement management. Evaluates and implements new technology for achieving company goals. Responsible for quality assurance and the evaluation of new and existing software products.

585. **INTERNET INFORMATION ARCHITECT, SENIOR** - Designs and constructs relational databases for data warehousing in an online environment. Develops data models, is responsible for data acquisition, access analysis, and design, and will perform duties relative to archive, recovery, and load strategy design and implementation procedures. Will design and modify data warehouses and implement data mapping and transformations in a variety of platforms (i.e., Oracle, Unix, Sybase). Coordinates new data development ensuring consistency and integration with existing warehouse structure. Will assist in the continuous improvement efforts to enhance performance and provide increased functionality. Typically, incumbents have 2 to 4 years of experience.

587. **WEB MANAGER** - Responsible for managing the ongoing oversight of Web strategy and operations including technical programming and database development, design (site content, aesthetic look and feel), and the site's day-to-day operations. Oversees the organization's Website operations with specific focus at content creation and Website maintenance. Responsible for developing and overseeing a business plan, annual budgets staff planning, and product and service delivery. Usually manages the activities of one or more Website-dedicated jobs such as Web developer, Web author, Web administrator, and/or Webmaster. Generally requires bachelor's degree in computer science or related field and experience with Web technologies and Web page design.

590. **WEB PROJECT MANAGER** - Performs project management functions for a team of business developers, marketing staff, and website programmers with responsibilities for planning, developing, and deploying Websites including the preparation of text, graphics, audio, and video for Web pages. Determines project scope and specifications and coordinates the work of design and development teams to implement online designs. Documents the business and technical requirements, budgets, schedules, and progress of each individual project. Reviews progress, manages resources, and ensures overall quality of the completed Website. Generally, this position has a college degree in computer science or related field, lead management experience, and a comprehensive understanding of Web technologies.

595. **WEBSITE ENGINEER** - Acting as the head technical person, maintains the connectivity between the Internet provider and the company's Website as well as the links between the Internet and the LAN/WAN sites within the company. Has considerable knowledge of Internet protocols, security hardware and software protocols, and implementation. Within area of responsibility, will install hardware, software, and networking systems company-wide. May provide company-wide level technical support for all hardware, software, and networking systems related to the network. May create/maintain mechanisms connecting the Internet and the company's internal (Intranet/Local) e-mail system. Will continuously keep up-to-date on technology advances and make recommendations for new systems and technologies that provide the company with a competitive advantage. Maintains and upgrades hardware and software including Website technical architecture related to hardware and telecommunication connectivity.

600. **WEB NETWORK ADMINISTRATOR** - Responsible for providing onsite technical and administrative support to maintain the technical integrity of the organization's Web-based server. Utilizing knowledge of operating systems and Internet services, performs the ongoing operation of the server software including maintaining system security, monitoring usage statistics and logs, and modifying configuration settings as needed to achieve optimal performance. Monitors site for acceptable performance and user accessibility. Will perform system tests to determine connectivity, capacity testing, performance tuning, and hardware/software responsibility. Maintains servers, creates monitoring reports and logs, and ensures functionality of links. May establish back-ups and monitor site security.

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605. HEAD OF WEB CONTENT - Responsible for developing, providing, and authorizing Website content to increase traffic, support and promote sales/services, and gain content visibility. Will manage and perform Website editorial activities including gathering and researching information that enhances the value of the site. Will act as a liaison with legal and business affairs departments and obtain clearance on copyrighted materials, ensuring all issues are resolved. Will seek, negotiate, and pursue content. Will maintain positive relationships with internal and external contacts and address all questions with a timely/appropriate response. May oversee data control technicians and writers dedicated to website. Background generally includes a college degree in English, Journalism, Graphic Design, Communications, or related field plus experience in production management, web page design, HTML, and web graphics types and standards.

610. INTERNET SECURITY ADMINISTRATOR - Is responsible for the security of the organizational data system. Monitors security through the use of "firewall" Internet technology. Maintains and monitors Internet usage on the company Website. Identifies potential violations in system security and implements actions to correct and protect site internally. Suggests and makes improvements in procedures to ensure Website security. May be responsible for communicating security procedures to organizational Internet users. Assists in communicating security procedures to users.

615. RESEARCH MANAGER, E-OPERATIONS - Is responsible for overall data analysis and evaluation for the Internet business data function. Analyzes relevant behavioral actions of targeted Internet users such as purchasing patterns, frequency, volume, and online/offline customer interaction. Responsible for the evaluation of traffic patterns pertaining to the organizational Website. From collected data, offers direction and methods to improve critical aspects of business via product sales, sales retention, frequency of website visitation, and customer satisfaction. Regularly provides activity and profitability reports. Interprets raw data into a usable form of market information to support the critical business function. Position typically requires a mathematics degree and 3 to 5 years of experience analyzing large databases using SAS or comparable software.

620. RESEARCH ANALYST, E-OPERATIONS - Assists in the data analysis and evaluation for the Internet business data function. Is responsible for the collecting, processing, and converting data into a database for on-going projects and reports. Helps in producing activity and profitability reports on a regular basis. Position typically requires a bachelor's degree and 0 to 2 years of statistical analysis experience.

625. WEB GRAPHICS DESIGNER, SENIOR - Under limited direction, supports the organization's strategies and goals relative to external communications by designing and building Web page links using a variety of graphics software applications, tools, and techniques such as interface features, site animation, and special-effects elements. Using languages such as HTML, creates and develops visually aesthetic graphics and writes text about the organization and Website, catalogs, short stories, and customer support documents for inclusion on the site itself. Adds links, ensuring theme consistency and scheduling workload. Requires a mastery of Web-based technologies and a thorough knowledge of HTML, PhotoShop, Illustrator, and/or other design-related applications as well as 2 to 4 years of work experience designing Web graphics and Website construction. Duties usually include design, production, and creating functional links on the Web.

630. WEB GRAPHICS DESIGNER, INTERMEDIATE - Under general supervision and using a variety of graphics software applications, tools, and techniques, supports the organization's strategies and goals relative to external communications by designing graphic elements for Web pages. Creates and develops visually aesthetic graphics and may write text about the organization and Website, catalogs, short stories, and customer support documents for inclusion in the site itself. Requires a proficiency of Web-based technologies and a thorough knowledge of HTML, PhotoShop, Illustrator, and/or other design-related applications as well as 1 to 2 years of work experience designing Web graphics and Website construction. Duties are usually restricted to design and production and do not include links and/or full Web design.

635. WEB DEVELOPER, SPECIALIST - With minimal direction, develops advanced custom programs written in Web-based languages. Designs, develops, troubleshoots, debugs, and implements software code such as HTML, ASP, Perl, C, C++, Active X, and Javascript for a component of the Website. Provides technical direction to graphic designers and other members of a project team to develop the site concept, interface design, and architecture of the Website. Has a thorough knowledge of programming and server software operations. Works closely with engineering, Web graphics designers, content managers, and artisans to ensure Website is developed according to specifications. Will oversee the technical efforts of lower-level programmers. May have lead responsibilities in ad hoc projects. This position is usually the top technical classification among software developers and incumbents usually have a mastery of various Web-based languages combined with 4 or more years of related programming experience.