

Software Programmer Analyst I/II/III

Definition

Under direction performs application software programming and program maintenance. Incumbents in this classification analyze existing application systems and procedures, assist with determining the feasibility of data processing applications, design, document, and participate in the implementation of systems of computer application programs. In addition Software Programmer Analysts may train clients in the use of application systems, may be responsible for application data base design and maintenance, or may act as a lead analyst.

Distinguishing Characteristics

The Software Programmer Analyst is distinguished from the Data Base Administrator (DBA) in that the latter is extensively involved in the design, analysis, construction, maintenance, and integrity of database files and data storage and retrieval systems. In general, the two positions complement each other, however, the Software Programmer Analyst's primary focus is the programs by which data is captured, maintained, manipulated, displayed, and reported while the primary focus of the DBA is on data storage structure efficiency and effectiveness.

The Software Programmer Analyst is distinguished from the Systems Programmer Analyst in that the latter is focused upon the configuration, installation, maintenance, monitoring, and support of application hardware platforms. The Systems Programmer Analyst is not typically involved in the designing, analysis, construction, and maintenance of application software programs and codes.

Software Programmer Analyst I. This is the entry level in the Software Programmer Analyst career series. Those at this level require closer supervision while they are acquiring the technical knowledge and ability to assess client application needs and develop feasibility analyses. Supervisory controls decrease as incumbents become more proficient and familiar with the required tasks. Software Programmer Analysts appointed to this level would typically have programming experience but would require extensive training to become familiar with the software and procedures used in Monterey County.

Software Programmer Analyst II. This is the journeyman level in the Software Programmer Analyst career series. Incumbents are familiar with all aspects of analyzing programming needs, developing, testing, troubleshooting, and implementing applications on several of the operating systems utilized by Monterey County. Software Programmer Analysts at this level could appropriately be assigned to (a) work independently with clients, (b) manage

projects to assess client needs and (c) design software applications to fit those needs.

Software Programmer Analyst III. This is the advanced working level in the Software Programmer Analyst career series. Employees achieve this level only after demonstrating comprehensive programming and design skills for either mainframe, mid-range, or server-based computer systems supported by the ITD department and the operating systems and networks connecting those systems. The Software Programmer Analyst III analyzes customer information needs and provides advanced application system and technology solutions. Employees at this level can work independently to research and correct the more complex analysis and programming problems and can act as program or project managers on multiple projects, possibly across client departments. Software Programmer Analysts at this level also may have lead worker responsibilities over project teams consisting of multiple disciplines.

Duties Performed. The duties and responsibilities listed below are illustrative only. They are not meant to be a full and exhaustive listing of all of the duties and responsibilities of the classification.

1. Designs, develops, installs, and tests complex computer application systems for County departments.
2. Develops programming analysis models by diagramming the customer's business requirements using schematic and graphical constructs and object-oriented methodology.
3. Writes programs in specified languages. Tests and debugs programs and writes job control language. Develops and maintains code written in different programming languages and databases.
4. Consults with clients, other departments, departmental staff, vendors, and technical support personnel to (a) determine customer computer application needs and functions, (b) propose system application designs, and (c) determine operating procedures and systems design to ensure applications meet user requirements.
5. Analyzes ongoing computer programming and application needs, proposes computer-based solutions, identifies design alternatives, and estimates cost and timing of systems modifications and new systems development.
6. Designs procedures for testing new and revised software. Conducts tests to evaluate conformance to specifications and to identify and correct problems.
7. Modifies or adds modules to existing applications.
8. Monitors and corrects problems with production runs identified by users and computer operations personnel, modifies existing programs to correct production problems, and develops and implements solutions.
9. Writes technical specifications for system and program design; writes user operating procedures for new and revised computer applications.
10. Evaluates, updates, and adapts purchased software and hardware to meet departmental requirements.

11. Coordinates the technical interface between different applications or between different systems needing to share applications.
12. Provides project and technical supervision of staff assisting in the development, implementation, and maintenance of applications.
13. Prepares lesson plans and conducts formal and on-the-job training for system users in the use of computer applications.
14. Participates in educational and professional development programs to remain current in the information technology field and in the County's operating systems and hardware.
15. May plan, organize, assign, prioritize, and review the work of other Software Programmers.
16. Performs additional related duties as required.

Qualifications

A combination of experience, education, and training which substantially demonstrates the following knowledge and abilities.

Software Programmer Analyst I:

Some Knowledge of:

1. Principles and techniques of computer programming including programming languages and utilities applicable to systems used by Monterey County ITD.
2. Principles and techniques used in the analysis and development of information technology applications.
3. Uses and limitations of information technology business applications programming.
4. Principles and techniques used in the analysis and development of information technology applications.
5. Principles of information entry, storage, and retrieval.
6. Current developments in information technology.
7. Operating capabilities of common hardware configurations.
8. Principles and practices of project and technical documentation.
9. Basic math, accounting, and statistics to develop simple equations in programming applications and to estimate costs of systems.
10. Principles and practices of training.
11. Basic principles of electronic data communication.

Ability to:

1. Define programs, collect and analyze data, validate conclusions, and make recommendations.
2. Think creatively to develop new methods, procedures or approaches to achieve desired results.
3. Modify and write programs for efficient business applications.
4. Write systems and programming documentation.

5. Identify and solve problems in programs and production systems.
6. Apply advanced programming languages and tools.
7. Understand complex written procedures, technical manuals, input documents, job requests, and operations documentation.
8. Write clear, concise instructions and training plans.
9. Communicate complex technical concepts to non-technical users.
10. Organize work and set priorities to meet deadlines. Work within prescribed time constraints.
11. Follow oral and written instructions.
12. Establish and maintain effective work relationships and maintain high levels of customer service.
13. Work effectively and efficiently under minimal daily supervision and in adverse or emergency situations.

Software Programmer Analyst II: In addition to the Software Programmer Analyst I knowledge and abilities listed above:

Working Knowledge of:

1. The methods and techniques used in operating either large-scale, multi-partitioned, mainframe computer systems, or midrange (for example, AS400), or server-based network platforms equivalent to those utilized in Monterey County.
2. Mainframe operating or other software system commands (for example, JCL, VSE, SNA, VTAM).
3. The procedures used to troubleshoot system and user problems related to availability of system services, peripheral equipment malfunctions, and application software problems.
4. The procedures used to submit, run, and re-run production jobs utilizing both manual job control procedures and automated job schedulers.

Ability to:

1. Recognize data network system functions and malfunctions and follow resolution procedures.
2. Interact with server-based platforms in order to accomplish assigned operational tasks (including backups, recycles, restarts).

Software Programmer Analyst III: In addition to the Software Programmer Analyst I and II knowledge and abilities above:

Thorough Knowledge of:

1. Software systems development life cycle.
2. Principles and techniques of software and systems quality assurance and control.
3. The principles and practices of supervision, and project management.

Ability to:

1. Understand highly complex information systems and methodologies.
2. Lead and mentor staff.

Examples of Experience/Education/Training

The knowledge, skills, and abilities listed above may be acquired through various types of experiences, education, or training, typically:

Software Programmer Analyst I:

Experience and Training: Completion of coursework leading to a two- (2) year degree in Computer Science or a closely related field; **OR** two (2) years of business applications programming experience; **OR** one (1) year of experience designing and programming for business applications and one year of the above education; **OR** two (2) years performing duties equivalent to an ITS Technician III, Communications Technician III, Data Center Operations Technician III, or a Telecommunications Technician III in Monterey County.

Software Programmer Analyst II:

Experience and Training: Completion of a four- (4) year degree in Computer Science or closely related field and one (1) year of experience performing both data processing systems analysis, design and programming for business applications which entailed analysis and design of several systems or segments of major systems; **OR** five (5) years of business applications programming, including experience in performing complex and difficult programming, and experience in analysis and design of business applications systems; **OR** two (2) years performing duties equivalent to an ITS Technician III, Communications Technician III, Data Center Operations Technician III, or Telecommunications Technician III in Monterey County; **OR** three (3) years experience performing work equivalent to that of a Software Programmer Analyst I in Monterey County.

Software Programmer Analyst III:

Experience and Training: Completion of a four- (4) year degree in Computer Science or a closely related field and six (6) years of experience performing both data processing systems analysis, design and programming for business applications which entailed analysis and design of several systems or segments of major systems; **OR** ten (10) years of business applications programming, including experience in performing complex and difficult programming, and experience in analysis and design of business applications systems; **OR** five (5) years experience performing work equivalent to that of a Software Programmer Analyst II in Monterey County (two years of which has been in a lead capacity).

Required Conditions of Employment

As a condition of employment the incumbent may be required to:

Successfully pass a modified background investigation.

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2. Possess a valid California Class "C" driver's license with a satisfactory driving record or be able to provide suitable transportation that is approved by the appointing authority.
3. Work occasional nights and weekends.

Physical and Sensory Requirements

The physical and sensory abilities required for this classification include:

1. Sight sufficient to read computer screens and standard computer printouts.
2. Sufficient dexterity to operate a computer keyboard.
3. Strength sufficient to lift and materials weighing up to 40 pounds.

Class History

Class Code:

Software Programmer Analyst I – 16C43

Software Programmer Analyst II – 16C44

Software Programmer Analyst III – 16C45

Established Date: April 8, 2003

Revised Date: N/A

Former Title: N/A

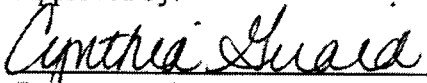
Bargaining Unit: J

EEO Category: PP/P/P

Work Group: 13/3/3

Worker's Comp. Code: 8810

Approved by:


Departmental Personnel Analyst


CAO/HR Senior Personnel Analyst

June 19, 2003
Date

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Date

CPS Consultants: KBW
2/10/03