SOFTWARE ENGINEER, SENIOR

Reports to: Information Technology Services Management
Division: Administrative Services

Our ideal candidate
You are an innovative professional with excellent communication skills, and a proven track record of earning the trust of colleagues and end users because of your attitude and results. You are good with people and explain complex technical issues in layman's terms. You are an excellent problem-solver, highly responsible, and take ownership of all responsibilities. You conduct research, apply new technologies as appropriate, communicate effectively, collaborate with other colleagues, and develop automated solutions to solve problems without jumping to conclusions or leaving the solutions to others. You mentor and train others, giving credit where it is due. You are solutions-oriented, avoid micromanaging, and you lead by example. You are committed to providing the best service possible.

General description
Responsible for maintaining and enhancing computer software systems; providing systems integration services; implementing and monitoring security and performance of hardware and software on mission-critical financial management information system. Role requires senior-level systems and database administration, performing the most complex activities within the scope of the department. Incumbent has broad architectural responsibilities, typically specializes in overlapping technology platforms, and may lead multiple projects while administering production system applications, infrastructure and databases.

Specific duties and responsibilities
• **Policy duties:** Provide technical input to policy and standards development related to technology use; maintain quality service by establishing standards.

• **Software development duties:** Perform complex technical work in design, development, installation, and maintenance of computer system software and utility programs; develop, maintain and enhance enterprise-wide computer software on a variety of platforms in the areas of payroll, finance, human resources, office administration, and other specialized programs.

—Analyze and design application systems and databases requiring innovative and diversified approaches to resolve issues in data collection, data coding, system controls, connectivity, auditing, processing cycles and reporting.

—Sort, organize, format and report a variety of complex data; develop application program test data, test programs and analyze test results to ensure all work meets expectations.

—Design, develop, and maintain new programs and modify existing programs to meet changing needs and provide enhancements; create and maintain detailed system documentation.

• **Systems integration duties:** Design and provide systems integration of specialized software programs; develop back-end database interfaces to web applications; design and code business and specialized application and data interfaces for efficiency, including automated data transfer among applications and secure electronic transmission of data to and from local, state, and federal agencies; work with network and software engineers to assess and test hardware and software interaction.

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• **Systems administration duties:** Maintain enterprise systems ensuring security, high availability, good performance, and reliability of information; oversee and maintain mission-critical application systems such as financial management information system.

—Provide effective provisioning, installation/configuration, operation, monitoring, and maintenance of application systems and related infrastructure; plan and perform major upgrades of operating system, diagnostic tools, and application software; install system software, patches, fixes, and upgrades; document configurations.

—Install and administer web (IIS) and SQL servers; manage database systems to ensure maximum up-time of servers and proper integration with other systems; manage, configure, and maintain servers in virtual and traditional environments; diagnose and resolve complex software, server, and networking issues.

—Apply principles and techniques of systems management, including SQL and Active Directory; provide systems level programming.

• **Database administration duties:** Perform database administration, and database performance tuning, ensuring current versions of Microsoft SQL Server, FileMaker Pro, and other databases as appropriate; develop and maintain database structures for storage and retrieval in the form of reports, queries, and scripts; perform database and web server builds.

—Maintain and update schematics and documentation of data structures while safeguarding information against accidental or unauthorized damage, modification, or disclosure; maintain daily database jobs and stored procedure library; maintain replication environments for business systems.

—Support database functions by designing and coding utilities; implement processes to ensure data accuracy and security.

• **Performance duties:** Analyze situations for performance tuning, capacity planning, and recovery; coordinate, evaluate, implement and test systems functionality and tuning for performance; monitor systems and database performance.

—Use tools that yield network, storage, processing time and data transmission analytics to continually fine-tune systems; configure, operate, and monitor performance of server hardware and software, including operating systems, applications, and patches to support efficient and effective operation; manage multiple servers, virtual and physical.

• **Backup and recovery duties:** Coordinate system backups and recovery with network engineers; maintain backups of data for archival retrieval and data analysis.

• **Security duties:** Recommend and reinforce security measures as needed; integrate application security with identity providers; evaluate security risks of current and planned databases.

— Participate in planning and maintenance of security infrastructure and procedures; perform systems administration, testing and application of security patches.

—Support infrastructure, upgrades, account maintenance, and authentication for network and application access; protect user privacy by following best practices.

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• **Problem-solving duties:** Diagnose and resolve complex software issues; may identify server or network issues; maintain technical knowledge by reviewing professional publications, establishing professional networks, and attending workshops and conferences as required; troubleshoot and resolve software problems reported by end users, including district technical staff.

• **Systems analysis duties:** Research and develop new processes to address emerging requirements; provide information by answering questions and conducting trainings.

—Meet with users to determine information systems needs and answer questions regarding software systems; document system specifications and develop custom systems or implement pre-packaged systems as appropriate; evaluate new software applications and alternative solutions; develop requirements, functional specifications and standards for software purchase and development; design solutions to ensure optimum performance.

—Interpret and apply federal, state, and local laws, codes and regulations.

• **Project management/technical leadership duties:** Coordinate work with staff to develop project timelines, work distribution, and timely completion of projects; provide implementation oversight of new application systems and software features for users; may select, train, and assign and evaluate work of Software Engineers; provide leadership to a team, technical guidance, and recommendations concerning computer programs and systems; proactively seek out help when needed to accomplish project goals.

• **Operations duties:** Operate desktop workstations, laptops, system consoles, virtual and physical servers, security appliances, network hardware, peripheral equipment and software.

• Perform related duties as assigned.

Requirements
A typical way to qualify for this classification would be:

Education: Bachelor's degree in computer science, management information systems, or a related field.

Experience: Five years of increasingly responsible experience designing, developing, programming and maintaining automated business systems.

Experience in an education or public sector setting and/or with enterprise financial systems is preferred.

Equivalent combinations of training, education, and experience that provide the required knowledge and abilities will also be considered.

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Knowledge of:

- All areas necessary to perform specific duties listed above
- Recent trends in software development, maintenance and enhancements, including web-based technologies and object-oriented development methodologies
- Principles of enterprise business systems; analysis, design, build, test, and deploy

Abilities:

- Take direction from supervisor and management, and work independently with little direction while managing time and requests effectively
- All skills required to perform duties listed above
- Provide leadership, technical guidance, and recommendations concerning computer programs and systems
- Research, upgrade, monitor, and recommend new system software and hardware;
- Apply principles and techniques of systems management
- Architect automated solutions for systems integration of disparate technologies; analyze data in terms of simultaneous occurrences of multiple processes; apply technology for improvements in organizational efficiency and effectiveness
- Develop and maintain database standards and naming conventions; install, research, test, and verify proper functioning of software patches and fixes; design and maintain normalized data structures; debug and code complex systems
- Listen to user requirements; understand the big picture at a systems level to provide the best solution; analyze alternatives and develop effective solutions; prepare development estimates for alternatives; design and develop the selected solution.
- Deal with multiple variables in situations where only limited standardization exists
- Train non-technical system users
- Interpret instructions furnished in written, oral, diagram, or schedule format
- Analyze and interpret data; draw conclusions; think critically; evaluate information and claims analytically and logically; choose optimal courses of action in a timely manner
- Develop and maintain cooperative working relationships with staff and user community
- Respond positively to change and modify behavior as the situation requires
- Be attentive to detail; focus on work content, work steps, and final work products
- Be innovative; devise new and better ways of doing things
- Maintain professional integrity and ethics; maintain trust through honesty, adherence to principles and personal accountability
- Self-manage; demonstrate personal organization, self-discipline, and dependability
- Be customer focused; attend to the needs and expectations of customers
- Meet schedules and timelines
- Communicate effectively both orally and in writing
- Have dexterity to operate a computer keyboard, lift moderately heavy objects, sit for extended periods of time

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Licenses and certificates:
A valid California driver's license and insurance coverage as required by state law. These requirements may be waived if the incumbent is able to perform their duties efficiently using alternative means of transportation.

Working conditions:
Work is performed primarily in an office environment, with occasional travel to school and administrative sites throughout Santa Barbara County. May require work outside of regular hours to respond to urgent matters or perform maintenance.

Salary range 99

Approved by the Personnel Commission:	June 14, 1984
Revised:	June 30, 1994
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