FRESNO COUNTY SUPERINTENDENT OF SCHOOLS
CLASSIFIED POSITION[1]

DATA ARCHITECT

BASIC FUNCTION:
Under the direction of the Senior Director, Application Support and Development, lead the design, development, installation and maintenance of the application software and data warehouse infrastructure; provide specialized and highly complex expertise in the design, implementation and maintenance of data pipelines, data models and date storage to support the Fresno County Superintendent of Schools' (FCSS) enterprise planning resource system; support and evaluate the integrity and available of the application database.

REPRESENTATIVE DUTIES:

ESSENTIAL DUTIES:
- Collaborate with the infrastructure team on hardware and software maintenance and upgrades.
- Coordinate with various technical teams in new database projects and applications.
- Define data requirements and design a robust and scalable data architecture, ensuring compatibility and integration with existing systems and platforms.
- Define non-functional data requirements for assigned projects, including considerations for performance, security, scalability, availability, and compliance.
- Design and implement solutions to safeguard database systems from unauthorized access or data loss.
- Design core components of the data architecture, such as data storage solutions (databases, data warehouses, data lakes), data integration pipelines (ETL), and data access layers.
- Design, develop, implement, and maintain logical and physical database schemas based on system and application requirements, including managing database specifications and collaborating with software engineers to plan, assess, and develop database objects, storage structures, retrieval, and reporting according to project specifications.
- Ensure data solutions are sustainable, secure, scalable, and adaptable to future business needs and technological advancements.
- Ensures technical requirements are met, including data definition, data structure, documentation, operational guidelines, and data protection.
- Establishes and enforces database policies, procedures, and integrity controls.
- Evaluate the impact of new applications on existing applications and database server resources, including hardware and software dependencies.
- Install, configure, and upgrade application databases to monitor performance, enhance security, and troubleshooting issues.
- Manage an inventory of all data assets, including documentation of data sources and database components.
- Manage and monitor system capacity management, considering the impact on memory, processing, and storage capacity for database performance.
- Manages database performance and stress test activities; assesses test results and provides recommendations for improving the system's performance.
- Oversee the installation, configuration, and maintenance of database management software, including upgrades, patches, and third-party tools.
- Participate in architecture and code reviews to ensure data-related components adhere to enterprise data standards and best practices.

- Participate in the evaluation of database management systems software and make recommendations for acquisition.
- Perform hands-on design, development, and implementation of data models, data pipelines, and data storage solutions, including creating prototypes and proof-of-concepts.
- Prepares detailed written documentation on database design, data relationships, operational procedures, and data guidelines.
- Provide database support to ensure data integrity, availability and performance of application systems.
- Support and utilize ETL tools for automating data collection, transformation, and loading.
- Troubleshoot and resolve data and database related issues.
- Attend and participate in a variety of assigned meetings, committees, conferences, in-services and/or special events.
- Comply with schedules, policies, regulations, procedures, orders, and directives of the County Superintendent.
- Exhibit professionally appropriate interpersonal skills including but not limited to tact, patience, flexibility and courtesy.
- Maintain a safe work environment.
- Operate a variety of office equipment, including but not limited to a computer and assigned software applications.
- Serve as a liaison between County Superintendent and administrators, personnel, outside organizations or the public concerning assigned area.
- Serve as a technical resource concerning assigned program, function or instructional area.
- Work collaboratively and maintain effective working relationships with others in the course of work in assigned area.

OTHER DUTIES:
- Drive a vehicle to conduct work, using own transportation.
- Perform related duties as assigned.
- Travel within Fresno County, statewide and/or nationwide.
- Work a flexible work schedule as required.

KNOWLEDGE AND ABILITIES:

KNOWLEDGE OF:
- Database structures, web-based applications and system capabilities of county office computer systems.
- Data replication methodologies and experience with high-volume data replication tools (e.g., HVR, SQL Server Replication).
- Data warehousing principles, dimensional modeling, and ETL for building data warehouses.
- Microsoft Azure cloud platform, including services like Azure SQL Database, Power Platform, and SharePoint.
- Microsoft Office Suite (Word, Excel, Power Point & Access).
- Multi-platform client server applications.
- PowerShell and SQL scripting for database administration, automation, and data manipulation tasks.
- Relational (SQL Server, Oracle) and NoSQL database systems.
- Proper English usage, grammar, spelling, punctuation and vocabulary in all forms of communication.

- State Education Code, local, state and federal laws, codes, regulations and requirements and county office organization, operations, policies and objectives as related to assigned activities and/or instructional area.
- Theoretical and technical aspects of field of specialty.

ABILITY TO:
- Align data architecture with business goals and objectives.
- Design and implement ETL processes for data integration.
- Design underlying data structures and flows to support applications and ensure performance, scalability and future enhancements.
- Develop and maintain database scheme design, data design and management.
- Facilitate the computerized collection, management, manipulation, and distribution of data used for analysis.
- Identify and resolve performance bottlenecks in databases.
- Implement data quality checks and validation rules.
- Integrate new systems and ensure data consistency across different platforms.
- Maintain and prepare records, documentation and reports.
- Meet schedules and timelines.
- Optimize database code or procedures for efficiency.
- Understand how data is structured and used in legacy systems to migrate or integrate with new systems.
- Analyze and evaluate situations accurately and adopt an effective course of action.
- Communicate effectively both orally and in writing.
- Drive a vehicle to conduct work.
- Interpret, apply, and explain rules, regulations, policies and procedures.
- Maintain consistent, reasonably regular, punctual attendance consistent with federal, state and local standards.
- Safely and successfully perform essential job functions consistent with federal, state and local standards, including meeting qualitative and/or quantitative productivity standards.
- Work confidentially and with discretion.
- Work independently with minimal direction.

EDUCATION AND EXPERIENCE:

EDUCATION:
- High School Diploma, General Education Degree (GED) or State High School Proficiency certificate.
- Bachelor's degree in computer science and or related field preferred.

EXPERIENCE:
- Four (4) years of experience working with relational SQL and non-relational SQL databases, including advanced query development and database administration.
- Two (2) years of hands-on experience designing, implementing, maintaining, and documenting enterprise-level databases and data warehouses to support organizational data needs.
- Two (2) years of experience leveraging data warehousing tools to orchestrate the Extract, Transform, Load (ETL) processes for enterprise applications, ensuring efficient and accurate data integration.

- Skilled in managing large-scale data environments, optimizing storage, and improving performance for business-critical applications.
- Developed and maintained comprehensive database and data warehouse documentation, ensuring alignment with technical and organizational standards.
- Sufficient training and experience to demonstrate the knowledge and abilities listed above.

LICENSURE AND OTHER REQUIREMENTS:
- Valid California driver's license; when driving for work, maintain automobile liability insurance in accordance with California Insurance Code section 11580.1 or maintain other statutorily authorized financial responsibility.
- Enrollment in the California Department of Motor Vehicles Government Employer Pull Notice Program at time of hire and throughout employment with the County Superintendent.

WORKING CONDITIONS:

ENVIRONMENT:
- Drive a vehicle to conduct work, using own transportation.
- Office and/or school facility environment.
- Regular interruptions.
- Small and large group meetings.

PHYSICAL DEMANDS:
- Bending at the waist, kneeling or crouching; climb or balance.
- Eyesight corrected or uncorrected sufficient to read a variety of materials including but not limited to fine print.
- Hearing with or without use of hearing aid(s) sufficient to hear any conversation with others; understandable voice and speech patterns.
- Manual dexterity and coordination sufficient to operate office and/or classroom equipment.
- Sitting, standing and/or walking for extended periods of time.
- Use hands to handle and/or feel; reach with hands and arms.
- Must frequently lift, push, pull or carry up to ten (10) pounds and occasionally lift and/or move up to twenty-five (25) pounds.

The physical demands and working conditions described here are representative of those that must be met by an employee to successfully perform the essential functions of this position, subject to reasonable accommodation.

This position description may not be an exhaustive list of all duties, knowledge, or abilities associated with this classification; however, it is intended to accurately reflect the principle job elements. Related duties, knowledge, or abilities to those expressly stated may also be required for successful performance of the position.

APPROVED:
Effective: 03/01/2025