

STATE OF MONTANA

JOB DESCRIPTION

Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodations to otherwise qualified individuals with disabilities.

Job Title: Software Developer 2.1 & 2.2 **Location: Helena**

Position Number: 20003, 20005, 20011, 20040, 23002, 23005, 81009, 81011, 81014, 81016, 81017, 81018, 81118, 81119, 81120, 81031, 20002, 81028, 81032, 81108, 25027, 19005, 22052, 81027, 81023, 40089

Department: Transportation

Division and Bureau: Information Services Division / Software & Data Systems Bureau

Section and Unit: Asset Strategy, Ops, & Maintenance Systems; Project Development & Delivery Systems; General Operations Systems; Statewide Planning & Modal Ops Systems

Job Overview:

These positions perform both systems analysis and design and programming tasks individually or as a member of a project team in support of the Department of Transportation's day-to-day operations. During the systems analysis phase of a project, these positions will use or adapt the most current systems analysis and design methodologies from computer science including methods of business process analysis to effectively determine the requirements for a new system or the changes to be made to an existing system. Once the requirements have been documented, these positions will translate the requirements into computer code, and write and test the necessary programs. Also responsible for training users and assessing user satisfaction with the completed project. These positions report to a section supervisor.

Essential Functions (Major Duties or Responsibilities):

Level 2.1

Computer Programming – 60%

- Primarily implements, debugs, and maintains existing systems.
- Design, write, and test computer programs based on the analysis phase.
- Includes thorough testing and user training for assigned components.

- Write, update, and maintain computer programs or software packages for operational tasks (e.g., inventory, data storage/retrieval, equipment control).
- Conduct trial runs of programs/applications to verify desired outputs and correct instruction flow.
- Compile and write documentation of program development/revisions; insert comments and complete documents per MDT standards.
- Apply CS principles to create workflow charts and diagrams for program flow, logic, I/O, and interfaces (for assigned modules).
- Write or contribute to end-user instructions/manuals.
- Demonstrate an understanding of artificial intelligence, machine learning, automation strategies, and AI governance frameworks, with the ability to guide responsible AI adoption and assess solution maturity at enterprise scale.

Application Analysis - 40%

- Apply Systems Analysis & Design principles to develop/administer applications; provide data analysis, training, and technical assistance (scope: medium-scale systems/components).
- Assist and conduct business process collection/analysis with senior staff/business owners; ensure functional specs accompany technical specs.
- Use accepted systems analysis/design methods on programming tasks; identify and resolve ambiguities in tasks/requirements.
- Develop testing documentation and traceability matrix; perform unit/system/UAT/regression testing and validate against the matrix; create models/documentation for analyzed tasks.
- Perform data and/or application conversions.
- Assist in developing procedures for new applications; provide guidance to business functions (within assigned scope).

Level 2.2

Computer Programming – 60%

- Designs components and may mentor Level 2.1 or entry level developers.
- Leads small feature development effort from concept to release.
- Participates in peer reviews and contributes to process improvements.
- Assess available programming environments and recommend optimal environments/mix; suggest adoption of new environments when appropriate.
- Identify critical test points and design comprehensive test processes for variations in data, inputs, and outputs.
- Diagnose error sources in complex interactions across procedures, routines, or code sections; plan correction strategies.
- Consult with managerial/technical personnel to clarify intent; discuss complexities/new methods and propose solutions (platforms, languages, interfaces, tools, methods).

- Perform or direct significant revision/repair/expansion of programs to improve efficiency or meet new requirements; evaluate interdependencies (other programs, DB interfaces, reusable modules, business practices, user interactions).
- Integrate individual efforts with team requirements; identify and manage program-level interfaces across systems.
- Research and evaluate new technologies and development procedures/policies to maintain advanced technical expertise.
- Demonstrate an understanding of artificial intelligence, machine learning, automation strategies, and AI governance frameworks, with the ability to guide responsible AI adoption and assess solution maturity at enterprise scale.

Application Analysis – 40%

- Model existing processes, tasks, and interfaces (business process & systems analysis) to determine business needs and select effective tools/solutions.
- Serve as lead on application development and small implementation projects; coordinate analysts/team members, manage activities/tasks/milestones, and handle issue resolution/escalation (typically up to 10 people in one business area).
- Perform or direct major revision/repair/expansion of existing systems/programs to improve efficiency or adapt to new requirements; evaluate cross-system interdependencies.
- Provide scoping changes (level of effort, time estimates, resource needs/impacts) to supervisor for discussion and guidance (focus: medium-scale single application projects).

Supervision

The number of employees supervised is: 0

The position number for each supervised employee is: NA

Physical and Environmental Demands:

These positions work in a typical office environment.

Knowledge, Skills and Abilities (Behaviors):

- Proficiency in Java programming language, including its syntax, libraries, and best practices.
- Knowledge of front-end technologies like HTML, CSS, or JavaScript.
- Knowledge of server-side development using frameworks like Spring, Spring Boot, or Hibernate.
- Knowledge of relational databases (e.g. Oracle), SQL, PL/SQL, and database design.
- Ability to design, develop, and consume RESTful APIs for communication between front-end and back-end systems.

- Understanding of software development methodologies like Agile or Scaled Agile Framework (SAFe).
- Skill in writing unit tests, integration tests, automated testing, and debugging code to ensure high-quality software delivery.
- Familiarity with deployment processes, continuous integration/continuous deployment (CI/CD) pipelines, and deployment tools such as GitLab.
- Ability to analyze complex technical problems and devise effective solutions using Java or related technologies.
- Effective communication skills to collaborate with team members, understand requirements, and present solutions.

Minimum Qualifications (Education and Experience):

The required knowledge and skills are typically acquired through a combination of education and experience equivalent to Bachelor's degree in Computer Science, Web Design and Development, or a related field.

Level 2.1: This position requires a minimum of 2 years of experience in Standard Query Language (SQL), Oracle forms and databases, Java, .NET, JavaScript, HTML, XML, or a related field.

Level 2.2: This position requires a minimum of 3 years of experience in Standard Query Language (SQL), Oracle forms and databases, Java, .NET, JavaScript, HTML, XML, or a related field.

Alternative qualifications include: Any combination of additional related work experience and education equivalent to the minimum qualifications.

Special Requirements:

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|---|---|
| <input checked="" type="checkbox"/> Fingerprint check | <input type="checkbox"/> Valid driver’s license |
| <input type="checkbox"/> Background check | <input type="checkbox"/> Other; Describe |
| 035 Union Code | Safety Responsibilities |

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

Signatures

My signature below indicates the statements in the job description are accurate and complete.

Human Resources Review

Job Code Title: Software Developer 2

Job Code Number: C1D022

My signature below indicates that Human Resources has reviewed this job description for completeness and has made the following determinations:

FLSA Exempt

FLSA Non-Exempt

Telework Available

Telework Not Available

Classification Complete

Organizational Chart attached

Human Resources:

Signature	Title	Date
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