

# 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 2.3      Location: Helena      Department: Transportation**

**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**

**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:**

This position will 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, this position 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, this position will translate the requirements into computer code, and write and test the necessary programs. The position will also train users and assess user satisfaction with the completed project.

## **Essential Functions (Major Duties or Responsibilities):**

### **Computer Programming - 60%**

- Assess the available programming environments within the department and determine what specific environment or mix of environments best suits the programming task to be accomplished and the needs of the program's users. Suggest the adoption of new environments if applicable.
- Design, write, and test computer programs based on the results of the analysis phase of the systems design process. Thoroughly test the programs, train users, and assess user satisfaction with the end product.

- Write, update, and maintain computer programs or software packages to handle a variety of tasks such as tracking inventory, storing or retrieving data, or controlling other equipment.
- Identify critical test points for particular computer programs. Design testing processes to thoroughly evaluate all of the reasonably identifiable variations in data, input, and output.
- Carefully identify the source or sources for all errors discovered during the testing process. Note the implications of complex interactions between multiple procedures, routines, or other sections of code on the error identification and corrections process.
- Conduct trial runs of programs and software applications to be sure they will produce the desired information and that the instructions are correct.
- Based on accepted practices in Computer Science, compiles and writes documentation of program development and subsequent revisions, inserting comments in the coded instructions so others can understand the program as well as completing identified documents per MDT standards.
- Consult with managerial and technical personnel to clarify program intent, discuss programming complexities or new methods required, and propose solutions including platforms, languages, interfaces, tools, and methods.
- Perform or direct revision, repair, or expansion of existing computer programs to increase operating efficiency or adapt to new requirements. Carefully evaluate the interdependencies between the program to be modified and any other existing programs, database interfaces, re-usable code modules, department business practices, and user interactions.
- Apply the principles of Computer Science to create workflow charts and other relevant diagrams to detail program flow, logic, input and output requirements, and interfaces.
- Contribute to instructions or manuals to guide end users.
- Create and maintain clear, concise technical documentation that is version-controlled, and kept up to date as features evolve.
- Integrate individual efforts with team's requirements. Identify points of interface with other programs to create successful program level interfaces.
- Researches and evaluates new technologies, new system development procedures and policies, user business processes and other issues related to system development, administration, and troubleshooting to maintain a high level of professional and technical expertise.

### **Application Analysis - 40%**

- Use currently accepted methods of business process analysis, systems analysis, and design to model existing processes, tasks, and interfaces within the Department of Transportation to carefully and accurately determine business needs and the most effective tools to use to meet those needs.
- Understands and applies the principles of Systems Analysis and Design (e.g., logical and physical database design, produces design documents from analysis documentation) at the application level and system level to improve the completion of a variety of existing business

tasks within the department. Scope typically involves large-scale applications, new applications, new systems, and custom off-the-shelf solutions.

- Serves as a technical or functional lead on large-scale implementation projects and new system development on high-complexity forms, large-scale critical applications, and interfaces with other agency systems. These projects typically involve more than 10 people, often in multiple business areas.
- Leads and coordinates business process collection and analysis activities with senior staff and business owners to fully understand the process and ensure functional specifications are documented along with the technical specifications.
- Analyzes and evaluates the flow of data to update and improve processes.
- Develops scoping documents, plans and priorities, and manages scope changes appropriately (including level of effort, time estimates and resource needs and impacts) on projects within an application group or division.
- Responsible for the development of appropriate data models and documentation to support and explain the results of all analyzed tasks. Reviews all models with stakeholders within the project to ensure processes are understood and correctly modeled.
- Assists with implementing change control policies and documentation.
- Assists in the development and implementation of business processes and procedures for new applications. Provides guidance to the business functions.
- Develops new interfaces and data conversion routines.
- Assists senior staff with vendor management tasks (developing or reviewing requirements for CEP's, RFP's, onsite software installations, etc.).

## **Supervision**

The number of employees supervised is: 0

The position number for each supervised employee is: n/a

## **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.

This position requires a minimum of 4 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:**

<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.

**Immediate Supervisor      Title      Date**

## Administrative Review Title Date

My signature below indicates that I have read this job description.

**Employee** **Title** **Date**

**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:

<input type="checkbox"/> FLSA Exempt	<input checked="" type="checkbox"/> FLSA Non-Exempt
<input checked="" type="checkbox"/> Telework Available	<input type="checkbox"/> Telework Not Available
<input checked="" type="checkbox"/> Classification Complete	<input type="checkbox"/> Organizational Chart attached

**Human Resources:**

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<b>Signature</b>	<b>Title</b>	<b>Date</b>
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