

# 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**

**Position Number: 20003, 20005, 20011, 20023, 20040, 23002, 23005, 81009, 81011, 81014, 81016, 81017, 81018, 81023, 81025, 81101, 81117, 81118, 81119, 81120**

**Location: Helena Department: Transportation**

**Division and Bureau: ISD**

**Section and Unit: Infrastructure and Applications**

### **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, the incumbent will use or adapt as necessary 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, he or she 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):**

#### **Application Analysis - 55%**

- Use currently accepted methods of business process analysis and 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 at the application level to improve the completion of a variety of existing business tasks within the Department. Develops and maintains components of applications and systems. Scope typically involves less complex and existing applications.
- Actively participates as a team member in both the analysis and development phases of program development assignments within the division and department. Develops or assists

in the development of solutions to create programs that effectively and efficiently mirror or improve existing business systems. Provides recommendations for the resolution of conflicts.

- Evaluates user processes, objectives and environments to determine computer system requirements necessary to support efficient and compliant business processes.
- Performs requirement analysis and system definition to develop specifications and documentation for review.
- Carefully examines the multiplicity of connections between systems, computer programs, existing databases, and current processing techniques to avoid potentially harmful side effects when adding new processes or updating existing ones.
- Conducts data analysis to support users by providing information necessary to support business decisions and to recommend improved business processes.
- Provides initial scoping (including level of effort, time estimates and resource needs and impacts) on projects with a single application focus for review.
- Uses the accepted methods for systems analysis and design on programming tasks. Identifies and resolves ambiguities in those tasks or business requirements to facilitate programming decisions. Creates appropriate models and documentation to support and explain the results of all analysis tasks.
- Reviews models with project leads and technical supervisors to ensure the process is understood and correctly modeled.
- Performs support, maintenance and problem resolution activities for agency applications and systems.
- Assists with training activities for users.

### **Computer Programming - 45%**

- 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.
- Write or contribute to instructions or manuals to guide end users.
- 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.

### **Supervision**

The number of employees supervised is: 0

The position number for each supervised employee is: NA

### **Physical and Environmental Demands:**

#### **Physical**

- Ability to sit or stand in one place for a length of time

#### **Mental**

- Knowledge of computer programming methodologies, working knowledge of PC's and operating systems, computer program application development standards and processes

### **Knowledge, Skills and Abilities (Behaviors):**

**KNOWLEDGE:** Principles of Systems Analysis and Design, Computer Programming, Project Management, Customer Service.

**SKILLS:** Reading Comprehension, Active Listening, Writing, Speaking, Critical Thinking. Active Learning, Learning Strategies, Service Orientation, Complex Problem Solving, Operations Analysis. Technology Design, Programming, Troubleshooting, Quality Control Analysis, Judgment and Decision Making, Systems Analysis.

### Minimum Qualifications (Education and Experience):

The required knowledge and skills are typically acquired through a combination of education and experience equivalent to a Bachelor's Degree in Computer Science, Web Design and Development, or a closely related field such as Information Systems Design or Computer Programming.

This position requires a minimum of 3 years of experience in SQL (Standard Query Language), Oracle RDBMS and its associated tools, Java, .NET technologies, JavaScript, Perl, HTML, XML.

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.

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<b>Immediate Supervisor</b>	<b>Title</b>	<b>Date</b>
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<b>Administrative Review</b>	<b>Title</b>	<b>Date</b>
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My signature below indicates that I have read this job description.

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<b>Employee</b>	<b>Title</b>	<b>Date</b>
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**Human Resources Review**

**Job Code Title: Software Developer 2.1 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:**

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**Signature**

**Title**

**Date**