

New

Ministry

Service Alberta

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Data Analytics Developer

Requested Class

Systems Analyst Level 3

Job Focus

Supervisory Level

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

Design: Identify Job Duties and Value

Job Purpose and Organizational Context

Why the job exists:

The Data and Content Management Division uses a one government approach to information and privacy governance, decision-making and service delivery across the Government of Alberta (GoA) balanced with individual client needs. This facilitates enhanced data access, collaboration, reduction in data duplication and innovation to ensure effective and efficient services across the government to provide better services to Albertans.

Reporting to the Manager, Analytics Capability Centre, the Data Analytics Developer will be responsible for expanding and optimizing data models and data pipeline architecture and processes established withing the Data Centre of Excellence, as well as optimizing data flow and collection for cross functional teams. The role provides experienced data pipeline building and data wrangling to optimize data systems and build data systems from the ground up. The role will help decide how and when to implement improvements to pipeline, systems, and infrastructure. The Data Analytics Developer has an in-depth understanding of data engineering best practices as well as expertise with the tools needed to debug and diagnose issues.

The Data Analytics Developer contributes as a team member to testing, QA, and documentation of data pipelines and systems. The role is part of cross functional Data Centre of Excellence unit that supports the delivery of data analytics, data services and data products by working collaboratively with data product

developers, data architects, data analysts and data scientists on variety of data initiatives to ensure optimal and consistent data delivery architecture throughout ongoing projects.

Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

1. Support design and maintenance of Data pipeline , data analytics workflows and data product workflows.

- Analyze and organize raw data;
- Combine raw information from variety of different sources within and across data domains;
- Build data systems and pipelines which support defined business data products;
- Prepare data for prescriptive and predictive modeling;
- Build algorithms and prototypes, which deliver desired business value, for effective and efficient operations;
- Develop analytical tools and programs when required to support business customers; and
- Support synthetic data creation and data anonymization.

2. Contribute to Data Architecture.

- Evaluate business needs and objectives;
- Interpret technology trends and patterns;
- Explore and incorporate ways to enhance data quality and reliability into defined data services;
- Design analytical tools and programs to support defined data services; and
- Design integration and orchestration patterns to operate data products effectively and efficiently with available resources.

3. Contribute and support Data Operations

- Monitor and report on data pipeline operations;
- Conduct complex data analysis and report on results;
- Identify opportunities for additional valuable data acquisition; and
- Collaborate with data scientists, data analysts, and data architects on several projects simultaneously.

4. Contribute and provide support to Data Centre of Excellence team members.

- Ensure effective leadership by providing coaching support to team members;
- Ensure a client centric and service oriented spirit and approach across the team;
- Guide consultation with clients and staff, as needed, on data services and provide leadership and direction on integration and pipeline design;

- Coach, mentor, and empower staff to use creative thinking and develop innovative solutions; and
 - Provide appropriate performance management and feedback tools, leading by example and fostering a working environment based on trust and respect.
- 5. Support Senior Manager and other leaders to accomplishing the mandate of the Data team.**
- Support the cultural shift towards data as a strategic asset;
 - Foster data engineering innovation as well as continuous improvement;
 - Present options, recommendations, and solutions to management regarding data engineering and design;
 - Ensure effective stakeholder engagement within the areas of responsibility ensuring an effective solution balance of enterprise and client centric needs; and
 - Initiate and maintain effective working relationships and partnerships with various internal and external stakeholders across the organization.

Problem Solving

Typical problems solved:

The Data Analytics Developer position is tasked with analyzing and designing integration and data pipelines that deliver data products within defined data services. It reviews and advises how to make the most of available resources, skills and capacities in the data environment. In addition, this position focuses on the considerable integration and coordination that is required between variety of stakeholders involved in developing data products and related processes.

This position supports mediation and negotiation with clients, vendors, peers and decision makers to achieve consensus in understanding of complex relationships in data requirements of various internal and external clients and business units.

The position assesses results and performance levels to advise how workloads may be optimized to achieve results while shifts in competing priorities and resource realignments occur to support strategic direction.

Types of guidance available for problem solving:

The Data Analytics Developer collaborates with internal and external technical teams within branch, division, department and GoA on information and data initiatives.

Additionally, the Data Analytics Developer can seek guidance from:

- Internal GoA policies, guidelines, and procedures;
- Other Senior Managers within the branch, division, department and across the GoA;
- Subject matter experts within the branch;
- Manager, Analytics Capability Centre;
- Director, Data Centre of Excellence; and
- Executive Director, Data and AI.

Direct or indirect impacts of decisions:

The Data Analytics Developer position directly impacts development, implementation and delivery of a comprehensive set of data products thereby ensuring successful delivery of data services provided by the Data Centre of Excellence. This position tangibly contributes to the success of team mates and colleagues across the GoA in creating and delivering data products to internal business customers and external partners.

The final outcomes of the Data Analytics Developer position are:

- Data that is managed consistently across the GoA;
- Initiatives that meet Data policies and align to the Data Strategy;
- Albertans' privacy is protected; and

- Leadership is provided with strategic, timely advice and recommendations.

Key Relationships

Major stakeholders and purpose of interactions:

The Data Analytics Developer participates in variety of interactions in and outside the department.

Internal Stakeholders

- Program Team (daily) to:
 - Align information and data management and application initiatives;
 - Collaborate on shared strategies and projects;
 - Provide consultation, advice and recommendations;
 - Exchange information and seek expertise, collaborate on initiatives;
 - Resolve issues; and
 - Maintain integrity of service delivery environment and professional relationships.

- Other staff within branch, division, DDD, TSO, and Cybersecurity (as required) to:
 - Provide consultation, advice and recommendations;
 - Exchange information and seek expertise;
 - Collaborate on initiatives;
 - Resolve issues;
 - Maintain integrity of service delivery environment; and
 - Raise awareness of emerging issues that require senior or executive involvement.

External Stakeholders

- Other GoA departments, Agencies, Boards and Commissions (Architects, Business Analysts, Directors, Executive Directors, CIO and ADM levels) (as required, varies by engagement) to:
 - Communicate and monitor shared service delivery related to data engineering;
 - Seek governance advice and guidance; and
 - Share information.

- Industry partners (as required, varies by engagement)
 - Provide consultation, advice and recommendations;
 - Exchange information and seek expertise;
 - Collaborate on initiatives;
 - Resolve issues;
 - Maintain integrity of service delivery environment; and
 - Raise awareness of emerging issues that require senior or executive involvement.

- Other jurisdictions (as required) to:
 - Exchange information, best practices, lessons learned, issues, challenges, solutions and related opportunities.

- Information Management Technology Vendors and partners (as required) to:
 - Obtain information about products and services; and
 - Review service levels and explore opportunities.

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Science	Engineering	Other

If other, specify:

6 yrs data engineering experience or an equivalent combination of education, training and experience.

Job-specific experience, technical competencies, certification and/or training:

Knowledge:

- Advanced working SQL knowledge and experience working with relational databases, query authoring (SQL) as well as working familiarity with a variety of databases;

- Experience building and optimizing data pipelines, architectures and data sets;
- Experience building processes that support data transformation, data structures, metadata, master data, dependency and workload management;
- Experience performing root cause analysis on internal and external data and processes to answer specific business questions and identify opportunities for improvement;
- A successful history of manipulating, processing and extracting value from large disconnected datasets;
- Working knowledge of message queuing, stream processing, and highly scalable data stores; and
- Experience supporting and working with cross-functional teams in a dynamic environment.

Skills:

- Strong analytic skills related to working with structured and unstructured datasets;
- Strong organizational skills to manage multiple complex tasks effectively;
- Strong negotiation and facilitation skills;
- Sound problem solving skills - identification, analysis, and evaluation of problems, opportunities, and associated outcomes;
- Strong communication skills: written, verbal, non-verbal and presentation;
- Well-developed project and time management skills;
- Able to work in both a team environment and independently; and
- Strong relationship building, client services, and partnership skills.

Technical Competencies, certification and/or training:

- Big data tools such as Snowflake, Hadoop, Spark, Kafka, etc.;
- Relational SQL and NoSQL databases, including Postgres and Cassandra;
- Data pipeline and workflow management tools such as Data Factory, DBT,SSIS etc.;
- Web-based interactive computing platform such as Jupyter Notebooks;
- Data quality tools such asPurview, Collibra, Informatica etc.;
- Cloud services such as Azure, AWS;
- Stream-processing systems such as Storm, Spark-Streaming, etc.;
- Object-oriented/object function scripting languages such as R, Python, Java, C++, Scala, etc.;
- Data visualization tools such as Power BI, Tableau, SAS, etc. is an asset; and

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Systems Thinking	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Takes a long-term view towards organization’s objectives and how to achieve them: <ul style="list-style-type: none"> • Takes holistic long-term view of challenges and opportunities • Anticipates outcomes and potential impacts, seeks stakeholder perspectives • Works towards actions and plans aligned with APS values • Works with others to identify areas for collaboration 	Maintains up-to-date knowledge of industry trends and GoA's objectives regarding data management; advises on potential risks that different options for data integration and analytics may have on service delivery; and, advises how to mitigate risk through changes in processes and design.
Creative Problem Solving	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Engages the community and resources at hand to	Works with business and technical colleagues

		<p>address issues:</p> <ul style="list-style-type: none"> • Engages perspective to seek root causes • Finds ways to improve complex systems • Employs resources from other areas to solve problems • Engages others and encourages debate and idea generation to solve problems while addressing risks 	<p>within GoA as needed by each engagement; and, searches out and appreciates different approaches to the work at hand to propose tactics that result in outcomes which benefit clients and GoA regardless of existing constraints.</p>
Agility	○ ○ ● ○ ○	<p>Identifies and manages required change and the associated risks:</p> <ul style="list-style-type: none"> • Identifies alternative approaches and supports others to do the same • Proactively explains impact of changes • Anticipates and mitigates emotions of others • Anticipates obstacles and stays focused on goals • Makes decisions and takes action in uncertain situations and creates a backup plan 	<p>Understands business objectives and translates those into technical terms to obtain improvements in data product delivery processes; and, is responsive to both the changing business needs and Data Unit priorities.</p>
Drive for Results	○ ○ ● ○ ○	<p>Takes and delegates responsibility for outcomes:</p> <ul style="list-style-type: none"> • Uses variety of resources to monitor own performance standards • Acknowledges even indirect responsibility • Commits to what is good for Albertans even if not immediately accepted • Reaches goals consistent with APS direction 	<p>Is fluent and practiced in integration design patterns, and foresees which patterns best fit the data product needs; and, works with data product stakeholders to coordinate activities that result in effective data integration and optimized data pipelines, which ensure desired value and timely service delivery.</p>
Develop Self and Others	○ ○ ● ○ ○	<p>Plans according to career goals and regular development:</p> <ul style="list-style-type: none"> • Aligns personal goals with career goals • Leverages strengths; attempts stretch goals • Provides feedback and openly discusses team performance 	<p>Stays in tune with industry developments and with evolving GoA business goals; communicates where issues may arise and how they may be circumvented; and, respects the input of others to continuously</p>