Applied A.I. Solutions
Foundations of Data Management

Final Project
Applied Governed Data Management Framework

Definitions

- **Operational Report** is instrumental to follow-up and report operational **activities on a daily, weekly, biweekly, or monthly basis**. It contains key performance indicators (KPIs) to help monitor and control business processes.

- **Executive Report** is a summarized operational report with layers of **aggregated data, and comparisons** between different periods of time. It contains key performance indicators (KPIs) to facilitate decision-making and performance improvement enhancements.

- Reporting is instrumental to a governed data management framework. A report can be an input to a specific subdomain or produced by a subdomain as an outcome to support a governance program.

- Operational and Executive Reports examples:

Operational Report - example

Sales Team Operations by Quarter
01/01/22 - 03/31/22

EXAMPLE

Region	Province	City	Sales person	Item	Unit Price ($)	Quantity Sold	Quantity Quota	Quantity Sold / Quantity Quota (%)	Discount Applied (%)	Discount Cap (%)	Gross Sales ($)	Gross Sales Quota ($)	Gross Sales / Gross Sales Quota (%)
Atlantic	New Brunswick	Moncton	S1	Chair	350	50.00	45.00	11%	10%	10%	$15,750	$15,750	0%
				Desk	750	28.00	30.00	-7%	-5%	5%	$22,050	$22,500	-2%
				Bookshelf	1,200	32.00	30.00	7%	5%	7%	$36,480	$36,000	1%
				Subtotal							$74,280	$74,250	
	Newfoundland and Labrador	St. John's	S2	Chair	350	30.00	30.00	0%	10%	10%	$9,450	$10,500	-10%
				Desk	750	18.00	20.00	-10%	-3%	5%	$13,905	$15,000	-7%
				Bookshelf	1,200	10.00	16.00	-38%	5%	7%	$11,400	$19,200	-41%
				Subtotal							$34,755	$44,700	-22%
	Nova Scotia	Halifax	S3	Chair	350	50.00	45.00	11%	10%	10%	$15,750	$15,750	0%
				Desk	750	35.00	30.00	17%	-7%	10%	$28,088	$22,500	25%
				Bookshelf	1,200	32.00	30.00	7%	5%	10%	$36,480	$36,000	1%
				Subtotal							$80,318	$74,250	8%
	Prince Edward Island	Charlottetown	S4	Chair	350	40.00	30.00	33%	10%	10%	$12,600	$10,500	20%
				Desk	750	20.00	25.00	-20%	0%	4%	$15,000	$18,750	-20%
				Bookshelf	1,200	10.00	10.00	0%	5%	9%	$11,400	$12,000	-5%
				Subtotal							$39,000	$41,250	-5%
	Total										**$228,353**	**$234,450**	**-3%**
Central	Ontario	Toronto	S5	Chair	350	50.00	45.00	11%	10%	10%	$15,750	$15,750	0%
				Desk	750	28.00	30.00	-7%	-5%	5%	$22,050	$22,500	-2%
				Bookshelf	1,200	32.00	30.00	7%	5%	7%	$36,480	$36,000	1%
				Subtotal							$74,280	$74,250	0%
		Ottawa	S6	Chair	350	30.00	30.00	0%	10%	10%	$9,450	$10,500	-10%
				Desk	750	18.00	20.00	-10%	-3%	5%	$13,905	$15,000	-7%
				Bookshelf	1,200	10.00	16.00	-38%	5%	7%	$11,400	$19,200	-41%
				Subtotal							$34,755	$44,700	-22%
				Total							$109,035	$118,950	-8%
	Quebec	Montreal	S7	Chair	350	50.00	45.00	11%	10%	10%	$15,750	$15,750	0%
				Desk	750	35.00	30.00	17%	-7%	10%	$28,088	$22,500	25%
				Bookshelf	1,200	32.00	30.00	7%	5%	10%	$36,480	$36,000	1%
				Subtotal							$80,318	$74,250	8%
		Quebec City	S8	Chair	350	40.00	30.00	33%	10%	10%	$12,600	$10,500	20%
				Desk	750	20.00	25.00	-20%	0%	4%	$15,000	$18,750	-20%
				Bookshelf	1,200	10.00	10.00	0%	5%	9%	$11,400	$12,000	-5%
				Subtotal							$39,000	$41,250	-5%
				Total							$119,318	$115,500	3%
	Total										**$228,353**	**$234,450**	**-3%**
TOTAL											**$456,705**	**$468,900**	**-3%**

Notes:
1. Breakdown by region, province, city, salespersons, items
3. Note all subtotals and grans totals
3. The operational report can be transformed based on the stakeholders' needs.
4. Breakdown is possible by items / salespeople / region / etc.
5. It is only an example of the details that an Operational report should have
6. For distribution best practice use PDF formatting, letter size to facilitate printing it.
7. It is a best practice to assess users' needs to incorporate additional details along with comparisons and KPIs that can facilitate business process monitoring and controlling.

Executive Report - example

Sales Team Monthly Executive Report
Gross Sales ($)

EXAMPLE

Province	Jan-22	Feb-22	Feb 22 vs Jan 22 (%)	Feb-21	Feb 22 vs Feb 21 (%)	KPIs: Participation Ratio AVG 2021	KPIs: Particpation Ratio Feb 22 (%)	
New Brunswick	$51,250	$56,000	9.3%	$55,500	0.9%	30.0%	32.6%	⬆
New Foundland and Labrador	$32,560	$35,000	7.5%	$34,958	0.1%	25.0%	20.4%	⬇
Nova Scotia	$65,900	$68,456	3.9%	$55,650	23.0%	35.0%	39.8%	⬆
Prince Edward Island	$15,984	$12,365	-22.6%	$10,500	17.8%	10.0%	7.2%	⬇
East Region	**$165,694**	**$171,821**	**3.7%** ⬆	**$156,608**	**9.7%** ⬆	**100.0%**	**100.0%**	

Notes:
1. mainly aggregated data to facilitate decison-making
5. It is only an example of aggregation that any Executive Report should have
6. For distribution best practice use PDF formatting, letter size to facilitate printing it.
7. It is a best practice to assess users' needs to incorporate additional details along with comparisons and KPIs that can facilitate business process monitoring and controlling.

FINAL PROJECT

Applied Data Management Framework: Operational and Executive Reports Development

Due Thursday, February 23rd, 2023, at 10:00 PM - (30 points max)

- Each group must develop **two reports**, **an operational report and an executive report** based on a series of specifications, rules and constraints detailed below.

- Groups must use Exercise 1, 2 and 3 as **building blocks** for the development of this Project.

- **Business Assumptions**: reporting always requires a thorough enterprise needs assessment (business, audience and stakeholders, technology, processes, report objectives).

  However, for this Project you do not need to perform an assessment. Instead, you must formulate **business assumptions** to understand data within a well-defined and clear **context**.

- The reports should **clearly** and **efficiently** present the right information and facilitate the correct interpretation of it to the target audience.

<u>**For this Project you must**</u>:

1. Apply a Data Governance Framework

   a. Use the DAMA Wheel to **identify** four **Data Governance sub-domains** applicable to your project

   b. **Define** two **Data Governance policies** for each identified sub-domain to enforce oversight of a reporting process. The objective is to achieve a well-controlled, transparent, efficient, and quality-driven activity

   c. Elaborate on how you have applied theory into practice. **Explain** the policies along with the corresponding procedures that you would implement, under which you will generate reports on an ongoing basis.

Consider the following sub-domains: Data Modeling and Design, Data Architecture, Data Integration and Interoperability, Metadata Management, Reference Data, Master Data Management, Document and Content Management, Data Quality, Data Privacy, Data Security

Project Submissions Due Thursday, February 23rd, 2023, at 10:00 PM - (30 points max)

A. **Submission A**: use only one PDF file to produce the following document maintaining the structure indicated below:

1.   Cover Page (Indicate group # and team members)
2.   Index
3.   Doc's main body:
     a. Project 1.a
     b. Project 1.b
     c. Project 1.c
     d. Lab Exercise 3 (point #3, submission a - Operational and Executive reports)
4.   Annex (exercises)
     a. Lab Exercise 1 – submission A
     b. Lab Exercise 2 – submission A
     c. Lab Exercise 3 – submission A

     Submit as **Group#_Project_A.pdf**

B. **Submission B:**
     a. ETL SQL scripts
     b. CSV files used during the ETL process
     c. Python code used for ETL
     d. SQL scripts used to produce the reports
     e. MySQL dump/export

     Submit as **Group#_Project_B.zip**

Excerpt from the College Policy on Academic Dishonesty:

The minimal consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, essay, project, or any evaluated material will be a grade of zero on that material.

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