

**INFO6002: Database Management 2**

Trimester 2, 2019 - Callaghan

**Assignment 3 – Data Marts and Business Intelligence****Due: 10:00 am, Wednesday 7<sup>th</sup> August 2019****WORTH 20% of final course mark.****This is an INDIVIDUAL Assignment.****Part 1: Data Mart Design (5 marks)**

In this section you will design and document a data mart schema for *Tasty'n'Yummy Pizzas* (the scenario discussed in Assignment 1).

Design a data mart schema to satisfy *Tasty'n'Yummy Pizzas* decision makers' information needs. You need to only design the data mart **schema only**. You do not need to implement it.

Write a short report (approx. 200 words excluding diagram & queries) which includes:

- A. Documented schema
- B. Subject-area/s covered by your data mart
- C. A discussion of how the data mart satisfies the information analysis needs of *Tasty'n'Yummy Pizzas*
- D. Give 5 examples of analysis queries that your design supports.

Save your document as *A3\_<student name>\_PizzaDataMartDesign.docx*.

**Part 2: Business Intelligence Reporting (15 marks)**

Adventure Works is a fictitious company that manufactures and sells metal and composite bicycles to North American, European and Asian commercial markets. Adventure Works Data Warehouse contains a number of data marts for the fictitious Adventure Works company.

Download and restore the AdventureWorks Data Warehouse database. The backup file is available on Blackboard at *Assessment / ASSIGNMENT 3 / Assignment Specification / AdventureworksDW2017.zip*

Part 2A: SQL Server Reporting Services (5 marks)

Create the following report using SQL Server Reporting Services. The report provides the monthly and yearly reseller sales for **Australian territory** for all years.

Save the project as *A3\_<student name>\_SSRSReport*.

The format of the report is given below:

**Monthly-Yearly Sales Report**  
**(Australia)**

Year	Month	Monthly Sales Amount
2001	January	\$2,345.98
	February	\$2,532.99
...		
	<b>Yearly Sales</b>	<b>\$1,232,322.99</b>
2002	...	

Note that the data is sample data and does not contain the exact values from the actual database.

Part 2B: Data Analytics – Report (5 marks)

Explore the data warehouse schema and data. Select subject area(s) that you would like to analyse in Adventure Works. Create data mart(s) either using either: SQL Server Analysis Server, or Power BI.

Save the project/file as *A3\_<student name>\_AWDataMart*.

Analyse the data and write a Business Intelligence report based on the Adventure Works data using:

- Power BI's visuals, dashboards etc. in your analysis, data visualisation and presentation and/or
- Excel's BI features such as pivot tables, charts and graphs.

Your report will include data analysis, information discovered and helpful insights and actions items from your data analysis. Include appropriate tables, charts, graphs etc. in your report to present your findings.

Note that your target audience for the BI report is the business management team of Adventure Works such as the CEO and senior management, so your BI report should be understood by business managers.

Save your report as *A3\_< student name >\_BIReport.docx*

Part 2C: Data Analytics –Presentation (5 marks)

In addition to the written report, you will present your Business Intelligence analysis during the Week 12 lab class. Your presentation should not exceed 5 minutes. Your presentation should be professional with some form of visual demonstration (i.e. slides).

Save your presentation document as *A3\_<student name>\_Presentation.<filetype>*

### Progress Monitoring

In this assignment, progress will be monitored at labs. Please ensure that you attend the lab sessions to discuss your progress.

Sections	Lab Session
Part 1	Week 10 lab
Part 2 (including preparation for your presentation)	Week 11 lab

### Submission Requirements

Your submission will include the following components:

Component	Submission method	Due date
1. Blackboard submission of project files	Submit to Blackboard link at <i>Assessments / ASSIGNMENT 3 / Assignment 3 Blackboard Submission</i>	10am Wednesday 7 <sup>th</sup> August
2. Turnitin submission of report documents	Submit to Turnitin link at <i>Assessments / ASSIGNMENT 3 / Assignment 3 Turnitin Submission</i>	10am Wednesday 7 <sup>th</sup> August
3. Hardcopy submission of report documents	Hand to lecturer at start of week 12 lab	10am Wednesday 7 <sup>th</sup> August
4. Presentation	In-class presentation	During Week 12 lab 10am – 12pm Wednesday 7 <sup>th</sup> August

#### 1. Blackboard submission of project files

Your Blackboard submission will be a .zip file named *A3\_<student name>.zip* containing the following items. You will also use additional subfolders for the project files.

Subfolder name	Contents	Assessment question
SSRS	SSRS Project files <i>A3_&lt;student name&gt;_SSRSReport</i>	Part 2A
DataMart	Project files for your AdventureWorks Data Mart <i>A3_&lt;student name&gt;_AWDataMart</i>	Part 2B
Presentation	Presentation file <i>A3_&lt; student name &gt;_Presentation.&lt;filetype&gt;</i>	Part 2C

## 2. Turnitin submission of report documents

Submit the following documents to Turnitin. These should NOT be put into .zip file.

Document	Assessment question
Data Mart design document for <i>Tasty'n'Yummy Pizzas</i> <i>A3_&lt;student name&gt;_PizzaDataMartDesign.docx</i>	Part 1
BI Report <i>A3_&lt; student name &gt;_BIReport.docx</i>	Part 2B

## 3. Hardcopy submission of report documents

In addition to your Turnitin submission for the above files, please also submit a hardcopy with a signed assessment cover sheet for the following documents:

Document	Assessment question
Data Mart design document for <i>Tasty'n'Yummy Pizzas</i> <i>A3_&lt;student name&gt;_PizzaDataMartDesign.docx</i>	Part 1
BI Report <i>A3_&lt; student name &gt;_BIReport.docx</i>	Part 2B

## 4. Presentation

You will deliver your presentation during the Week 12 lab class. Projects that are not demonstrated and presented will not be marked and may result in a zero mark for the Assignment.

## Assessment RUBRIC

The assessment RUBRIC is given below:

	Excellent	Good	Satisfactory	Poor	Fail
	(5)	(4)	(3)	(1-2)	(0)
Data Mart Design (5)	The data mart design is illustrated, documented and clearly justified.	The design meets most of the requirements specified. The schema is well documented and justified.	A schema for data mart is given. The schema is partially documented.	An undocumented and poorly justified data mart schema is provided.	No submission
	(5)	(4)	(2-3)	(1)	(0)
SQL Server Reporting Services (5)	Reports generated without any errors. The formatting is as specified in the specification.	Report contains most data correctly. Minor errors in the formatting.	AdventureWorksDW2017 database restored. Report contains some data.	AdventureWorksDW2017 database restored but no report is provided.	No submission
	(5)	(4)	(3)	(1-2)	(0)
Data Analytics - Report (5)	Data Mart(s) design and implementation without flaws. A well written report with detailed data analysis supporting conclusions/claims.	Data Mart(s) design is implemented. A report with data analysis supporting conclusions/claims is presented.	Data Mart is correctly implemented. May contain minor design flaws (e.g. hierarchies). Basic OLAP reports and simplistic data analysis and evaluation	Data Mart design is correct. Errors in implementation and cannot populate data. No report submitted.	No data Mart design or report submission
	(5)	(4)	(3)	(1-2)	(0)
Data Analytics – Presentation (5)	Presentation delivered in a confident and professional manner.  Contains detailed explanation of data analysis.  Accompanied by professional visual materials	Presentation adequately explains data analysis.  Accompanied by professional visual materials.	Evidence of effort in preparation. Basic explanation of data analysis.	Little or no preparation evident for presentation.	No presentation given