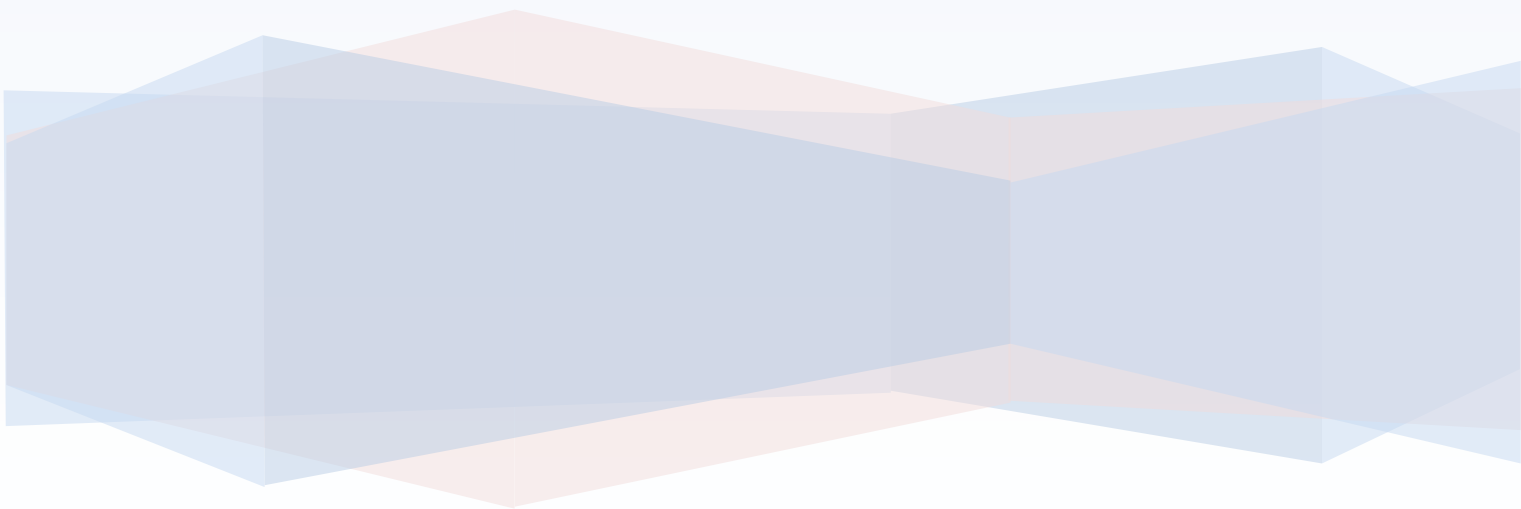


COS20015 – Fundamentals of Data Management

Learning Summary Report

SM Ragib Rezwan (103172423)



Self-Assessment Details

The following checklists provide an overview of my self-assessment for this unit.

	Pass (P)	Credit (C)	Distinction (D)	High Distinction (HD)
Self-Assessment (please tick)				✓

Self-assessment Statement

Pass level	Included (please tick)
Learning Summary Report	✓
Test is Complete in Doubtfire	✓
All Pass Tasks signed off in Doubtfire	✓

Credit level – in addition to Pass level criteria:	Included (please tick)
All mandatory Credit tasks have been signed off	✓

Distinction level – in addition to Credit level criteria	Included (please tick)
Custom datastore and design report with suitable illustrations	✓

High Distinction level – in addition to Credit level criteria	Included (please tick)
Research report, and associated pieces OR	✓
Custom data store with additional investigation	✓

Declaration

I declare that this portfolio is my individual work. I have not copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for me by another person.

Signature: SM Ragib Rezwan

Introduction

This report summarises what I have learnt in COS20015 Fundamentals of Data Management. It includes a self-assessment against the criteria described in the unit outline, a justification of the pieces included, details of the coverage of the unit's intended learning outcomes, and a reflection on my learning.

Coverage of the Intended Learning Outcomes

This section outlines how the pieces I have included demonstrate the depth of my understanding in relation to each of the unit's intended learning outcomes.

ILO 1: Data Management Theory

Appreciate set theory, relational algebra, ternary logic, and algorithmic complexity in the context of data management.

The following pieces demonstrate my ability in relation to this ILO:

Task 1.2.1: demonstrates my use of different regex to solve a task

Task 1.1.2: demonstrates my use of different regex to solve a task

Task 2.2.1: demonstrates my way of writing in JSON to solve a task

Task 2.2.2: demonstrates my way of querying in JSONiq to solve a task

Task 2.1.1: demonstrates my way of writing in XML to solve a task

Task 2.1.2: demonstrates my way of querying in XQuery to solve a task

Task 2.1.3: demonstrates my way of querying in XQuery using FLWOR to solve a task

Task 3.2.1: demonstrates my way of reading, analysing and designing ER diagrams and UML

Task 3.1.1: demonstrates my way of reading, analysing and designing ER diagrams and UML

Task 3.1.2: demonstrates my way of reading, analysing and designing ER diagrams and UML

Task 3.1.3: demonstrates my way of reading, analysing and designing ER diagrams and UML

Task 3.1.4: demonstrates my way of reading, analysing and designing ER diagrams and UML

Task 3.1.5: demonstrates my way of reading, analysing and designing ER diagrams and UML

Task 4.2.1: demonstrates my way of finding dependency and also composite key using normalization

Task 4.1.1: demonstrates my way of making 1NF

Task 4.1.2: demonstrates my way of making 2NF

Task 4.1.3: demonstrates my way of making 3NF

Task 5.2.1: demonstrates my way of checking constraints, setting defaults, primary and foreign keys, etc for a table using DDL

Task 5.1.1: demonstrates my way of making table using DDL

Task 5.1.2: demonstrates my way of identifying primary keys in tables

Task 5.1.3: demonstrates my way of using foreign key constraints

Task 5.1.4: demonstrates my way of making table using DDL

Task 5.1.5: demonstrates my way of modifying table (by adding check constraint, deleting comment) in DDL

Task 7.2.1: demonstrates my way of querying a database

Task 7.2.2: demonstrates my way of querying a database (extracting year)

Task 7.2.3: demonstrates my way of querying a database (using where not exists)

Task 7.1.1: demonstrates my way of querying a database (using concat and alias)

Task 7.1.2: demonstrates my way of querying a database

Task 7.1.3: demonstrates my way of querying a database (using aggregate)

Task 7.1.4: demonstrates my way of querying a database (using joins)

Task 7.1.5: demonstrates my way of querying a database (using joins and views)

Task 8.2.1: demonstrates my way of inserting data to a table in a database (using Insert, select)

Task 8.1.1: demonstrates my way of inserting data to a table in a database

Task 8.1.2: demonstrates my way of inserting data to a table in a database

Task 8.1.3: demonstrates my way of inserting data to a table in a database

Task 8.1.4: demonstrates my way of deleting data from a table in a database

Task 8.1.5: demonstrates my way of alter data to a table in a database

Task 9.2.1: demonstrates my way to insert data to same tables and observe them using different transaction

Task 9.2.2: demonstrates my way to insert data to same tables and observe them using different transaction

Task 9.1.1: demonstrates my way to insert data to same tables and observe them using different transaction

Task 10.2.1: demonstrates my way to run joins and determine what steps database actually takes to run the query (using explain extended)

Task10.2.2: demonstrates my way to run joins and determine what analyse does to database

Task 10.2.3: demonstrates my way to run query and determine what steps database actually takes to access the rows (using explain extended)

Task 10.2.4: demonstrates my way to run query and determine what steps database actually takes to access the rows (using explain extended)

Task 11.2.1: demonstrates my way of querying a database

Task 11.2.2: demonstrates my way of inserting into a database

Task 11.2.3: demonstrates my way of updating a database

Test: demonstrates all the things I learnt in this course regarding this ILO, and the efficiency I have in utilizing them under severe time pressure

Custom database task: demonstrates all the things I have learnt regarding this ILO from this course

Research project task: demonstrates all the things I have learnt regarding this ILO from both this course and also beyond

ILO 2: Storing Data

Use techniques, tools and methods to sort, search and transform data stored in a variety of data formats.

The following pieces demonstrate my ability in relation to this ILO:

Task 1.2.1: demonstrates my use of linux system to filter certain data from log file

Task 1.2.2: demonstrates my use of linux system to filter certain data from log file

Task 1.1.1: demonstrates my use of linux system "grep" command

Task 1.1.2: demonstrates my use of linux system to filter certain data from log file

Task 1.1.3: demonstrates my use of linux system to filter certain data from log file

Task 1.1.4: demonstrates my use of linux system to filter certain data from log file and then also putting output in another text file

Task 1.1.5: demonstrates my use of linux system to find no of certain data from log file

Task 2.2.1: demonstrates my use of Json software on Jsonlint.com

Task 2.2.2: demonstrates my use of querying in Jsoniq software on Jsoniq.org

Task 2.1.1: demonstrates my use of querying in XQuery software on videlibri.sourceforge.net

Task 2.1.3: demonstrates my use of FLWOR querying in XQuery software on videlibri.sourceforge.net

Task 4.2.1: demonstrates my way of reading data stored in a table and finding dependency and hence composite key (using Microsoft word)

Task 4.1.1: demonstrates my way of reading data stored in a table and making it into 1NF (using Microsoft word)

Task 4.1.2: demonstrates my way of reading data stored in a table and making it into 2NF (using Microsoft word)

Task 4.1.3: demonstrates my way of reading data stored in a table and making it into 3NF (using Microsoft word)

Task 5.2.1: demonstrates my way of making tables using Xampp software

Task 5.1.1: demonstrates my way of making tables using Xampp software

Task 5.1.2: demonstrates my way of noting primary keys in table (using Microsoft word)

Task 5.1.3: demonstrates my way of noting foreign keys constraints in table (using Microsoft word)

Task 5.1.4: demonstrates my way of making table using XAMPP

Task 5.1.5: demonstrates my way of modifying tables made in XAMPP

Task 7.2.1: demonstrates my way of querying database made in MariaDB

Task 7.2.2: demonstrates my way of querying database made in MariaDB

Task 7.2.3: demonstrates my way of querying database made in MariaDB

Task 7.1.1: demonstrates my way of querying database made in MariaDB

Task 7.1.2: demonstrates my way of querying database made in MariaDB

Task 7.1.3: demonstrates my way of querying database made in MariaDB

Task 7.1.4: demonstrates my way of querying database made in MariaDB

Task 7.1.5: demonstrates my way of querying database made in MariaDB

Task 8.2.1: demonstrates my way of inserting data to a table in a database in MariaDB

Task 8.1.1: demonstrates my way of inserting data to a table in a database in MariaDB

Task 8.1.2: demonstrates my way of inserting data to tables in a database in MariaDB

Task 8.1.3: demonstrates my way of inserting data to parent and child table in a database in MariaDB

Task 8.1.4: demonstrates my way of deleting data from parent and child table in a database in MariaDB

Task 8.1.5: demonstrates my way of updating data from parent and child in a database in MariaDB

Task 9.2.1: demonstrates my way to insert data to same tables and observe them using different transaction in MariaDB using MYSQL workbench

Task 9.2.2: demonstrates my way to insert data to same tables and observe them using different transaction in MariaDB using MYSQL workbench

Task 9.1.1: demonstrates my way to insert data to same tables and observe them using different transaction in MariaDB using MYSQL workbench

Task 10.2.1: demonstrates my way to run a join and determine what steps database actually takes to run the query (using explain extended) in MariaDB using MYSQL workbench

Task 10.2.2: demonstrates my way to run query and determine what analyse does (using analyse table) in MariaDB using MYSQL workbench

Task 10.2.3: demonstrates my way to run query and determine what steps database actually takes to access the rows (using explain extended) in MariaDB using MYSQL workbench

Task 10.2.4: demonstrates my way to run query and determine what steps database actually takes to access the rows (using explain extended) in MariaDB using MYSQL workbench

Task 11.2.1: demonstrates my way of querying a database using MongoDB

Task 11.2.2: demonstrates my way of inserting into a database using MongoDB

Task 11.2.3: demonstrates my way of updating a database using MongoDB

Test: demonstrates all the things I learnt in this course regarding this ILO, and the efficiency I have in utilizing them under severe time pressure

Custom database task: demonstrates all the things I have learnt regarding this ILO from this course

Research project task: demonstrates all the things I have learnt regarding this ILO from both this course and also beyond

ILO 3: Data Representation and Access

Explain the role of data types, data representation, indexing and schemas in managing data, and use methods to validate that data matches an expected schema.

The following pieces demonstrate my ability in relation to this ILO:

Task 1.2.1: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 1.2.2: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 1.1.1: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 1.1.2: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 1.1.3: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 1.1.4: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 1.1.5: demonstrates my way of managing the data given in a log file by using methods to validate that the data matches certain syntax

Task 2.2.1: demonstrates my way of converting XML document into JSON notation

Task 2.2.2: demonstrates my way of querying a JSON document using JSONiq

Task 2.1.1: demonstrates my way of writing in XML

Task 2.1.2: demonstrates my way of querying an XML in XQUERY

Task 2.1.3: demonstrates my way of querying using FLWOR in XQUERY

Task 3.2.1: demonstrates my way of designing ER diagram

Task 3.1.1: demonstrates my way of designing ER diagram

Task 3.1.2: demonstrates my way of identifying and using primary key

Task 3.1.3: demonstrates my way of using foreign key

Task 3.1.4: demonstrates my way of identifying primary key and data type

Task 3.1.5: demonstrates my way of designing ER diagram

Task 4.2.1: demonstrates my way of finding dependency and composite keys from a table

Task 4.1.1: demonstrates my way of converting table into 1NF form

Task 4.1.2: demonstrates my way of converting table into 2NF form

Task 4.1.3: demonstrates my way of converting table into 3NF form

Task 5.2.1: demonstrates my way of making table using DDL

Task 5.1.1: demonstrates my way of making table using DDL

Task 5.1.2: demonstrates my way of noting primary keys in tables

Task 5.1.3: demonstrates my way of noting foreign key constraints in tables

Task 5.1.4: demonstrates my way of making table using DDL

Task 5.1.5: demonstrates my way of altering table using DDL

Task 7.2.1: demonstrates my way of querying database using mysql

Task 7.2.2: demonstrates my way of querying database using mysql

Task 7.2.3: demonstrates my way of querying database using mysql

Task 7.1.1: demonstrates my way of querying database using mysql

Task 7.1.2: demonstrates my way of querying database using mysql

Task 7.1.3: demonstrates my way of querying database using mysql

Task 7.1.4: demonstrates my way of querying database using mysql

Task 7.1.5: demonstrates my way of querying database using mysql

Task 8.2.1: demonstrates my way of inserting data to table in database using Insert, select, commit/rollback and autocommit

Task 8.1.1: demonstrates my way of inserting data to table in database using Insert, commit/rollback and autocommit

Task 8.1.2: demonstrates my way of inserting data to table in database using Insert, commit/rollback and autocommit

Task 8.1.3: demonstrates my way of inserting data to parent and child table in database using Insert, commit/rollback and autocommit

Task 8.1.4: demonstrates my way of deleting data from parent and child table in database using delete, commit/rollback and autocommit

Task 8.1.5: demonstrates my way of updating data to parent and child table in database using update, commit/rollback and autocommit

Task 9.2.1: demonstrates my way to insert data to same tables and observe them using different transaction

Task 9.2.2: demonstrates my way to insert data to same tables and observe them using different transaction

Task 9.1.1: demonstrates my way to insert data to same tables and observe them using different transaction

Task 10.2.1: demonstrates my way to run join and determine what steps database actually takes to query (including indexes used for each table)

Task10.2.2: demonstrates my way to run query and determine what analyse does (ie gives index statistics)

Task 10.2.3: demonstrates my way to run query and determine what steps database actually takes to access the rows (including indexes used for the table)

Task 10.2.4: demonstrates my way to run query and determine what steps database actually takes to access the rows (including indexes used for the table)

Task 11.2.1: demonstrates my way of querying a database using NOSQL

Task 11.2.2: demonstrates my way of inserting into a database using NOSQL

Task 11.2.3: demonstrates my way of updating a database using NOSQL

Test: demonstrates all the things I learnt in this course regarding this ILO, and the efficiency I have in utilizing them under severe time pressure

Custom database task: demonstrates all the things I have learnt regarding this ILO from this course

Research project task: demonstrates all the things I have learnt regarding this ILO from both this course and also beyond

ILO 4: Data Retrieval and Performance

Use appropriate methods to efficiently store, insert and retrieve data appreciating the underlying trade offs between different strategies.

The following pieces demonstrate my ability in relation to this ILO:

Task 1.2.2: demonstrates my way of retrieving certain stored data from text file

Task 1.1.1: demonstrates my way of retrieving certain stored data from text file

Task 1.1.2: demonstrates my way of retrieving certain stored data from text file

Task 1.1.4: demonstrates my way of retrieving certain stored data from text file and placing it in another file

Task 1.1.5: demonstrates my way of retrieving no of certain data from text file

Task 2.2.1: demonstrates my way of changing data from XML to JSON

Task 2.2.2: demonstrates my way of querying JSON using JSONiq

Task 2.1.1: demonstrates my way of storing data as XML

Task 2.1.2: demonstrates my way of querying data using XQUERY

Task 2.1.3: demonstrates my way of querying data using XQUERY (with FLWOR)

Task 3.2.1: demonstrates my way of storing data as an ER diagram

Task 3.1.1: demonstrates my way of storing data as an ER diagram

Task 3.1.2: demonstrates my way of understanding and using primary key

Task 3.1.3: demonstrates my way of understanding and using foreign key

Task 3.1.4: demonstrates my way of understanding and using primary key and data type

Task 3.1.5: demonstrates my way of storing data as an ER diagram

Task 4.2.1: demonstrates my way of finding dependency and composite keys for a table

Task 4.1.1: demonstrates my way of storing data in a 1NF form table

Task 4.1.2: demonstrates my way of storing data in a 2NF form table

Task 4.1.3: demonstrates my way of storing data in a 3NF form table

Task 5.2.1: demonstrates my way of storing data in a table, adding check constraints, defaults, primary and secondary keys

Task 5.1.1: demonstrates my way of storing data with their data types and size

Task 5.1.2: demonstrates my way of finding primary key

Task 5.1.3: demonstrates my way of finding foreign key constraints

Task 5.1.4: demonstrates my way of storing data in a table

Task 5.1.5: demonstrates my way of altering data stored in a table

Task 7.2.1: demonstrates my way of querying database using mysql

Task 7.2.2: demonstrates my way of querying database using mysql

Task 7.2.3: demonstrates my way of querying database using mysql

Task 7.1.1: demonstrates my way of querying database using mysql

Task 7.1.2: demonstrates my way of querying database using mysql

Task 7.1.3: demonstrates my way of querying database using mysql

Task 7.1.4: demonstrates my way of querying database using mysql and joins

Task 7.1.5: demonstrates my way of querying database using mysql and using it to make view

Task 8.2.1: demonstrates my way of inserting data to a table in database using mysql

Task 8.1.1: demonstrates my way of inserting data to a table in database using mysql

Task 8.1.2: demonstrates my way of inserting data to a table in database using mysql

Task 8.1.3: demonstrates my way of inserting data to parent and child table in database using mysql

Task 8.1.4: demonstrates my way of deleting data from parent and child tables in database using mysql

Task 8.1.5: demonstrates my way of updating data from parent and child tables in database using mysql

Task 9.2.1: demonstrates my way to insert data to same tables and observe them using different transaction

Task 9.2.2: demonstrates my way to insert data to same tables and observe them using different transaction

Task 9.1.1: demonstrates my way to insert data to same tables and observe them using different transaction

Task 10.2.1: demonstrates my way to run joins and determine what steps database actually takes to run the query

Task10.2.2: demonstrates my way to run query and determine what analyse does.

Task 10.2.3: demonstrates my way to run query and determine what steps database actually takes to access the rows.

Task 10.2.4: demonstrates my way to run query and determine what steps database actually takes to access the rows .

Task 11.2.1: demonstrates my way of querying a database

Task 11.2.2: demonstrates my way of inserting into a database

Task 11.2.3: demonstrates my way of updating a database

Test: demonstrates all the things I learnt in this course regarding this ILO, and the efficiency I have in utilizing them under severe time pressure

Custom database task: demonstrates all the things I have learnt regarding this ILO from this course

Research project task: demonstrates all the things I have learnt regarding this ILO from both this course and also beyond

ILO 5: Concurrency Considerations

Appreciate issues related to concurrency in data management and describe basic strategies for addressing these issues

The following pieces demonstrate my ability in relation to this ILO:

Task 1.2.2: demonstrates my way of running a regex then piping the results to run another regex to further filter it at the same time

Task 1.1.1: demonstrates my way of running a regex on linux

- Task 1.1.2: demonstrates my way of running a regex on linux
- Task 1.1.3: demonstrates my way of running a regex on linux
- Task 1.1.4: demonstrates my way of running a regex on linux and piping results
- Task 1.1.5: demonstrates my way of running a regex on linux
- Task 2.2.1: demonstrates my way of changing XML to JSON and validating it on Jsonlint.com
- Task 2.2.2: demonstrates my way of running JSONiq and validating it on Jsoniq.org
- Task 2.1.1: demonstrates my way of making document in XML
- Task 2.1.2: demonstrates my way of running query in XQUERY
- Task 2.1.3: demonstrates my way of running querying in XQUERY using FLWOR
- Task 3.2.1: demonstrates my way of designing ER diagram
- Task 3.1.1: demonstrates my way of designing ER diagram
- Task 3.1.2: demonstrates my way of finding primary key for a table
- Task 3.1.3: demonstrates my way of finding foreign key for a table
- Task 3.1.4: demonstrates my way of setting data type and primary key to table
- Task 3.1.5: demonstrates my way of designing ER diagram
- Task 4.1.1: demonstrates my way of converting rows of data in table into 1NF form table
- Task 4.1.2: demonstrates my way of converting rows of data in table into 2NF form table
- Task 4.1.3: demonstrates my way of converting rows of data in table into 3NF form table
- Task 5.2.1: demonstrates my way of making multiples tables simultaneously
- Task 5.1.5: demonstrates my way of making multiples tables simultaneously
- Task 7.2.3: demonstrates my way of running sub query in database using where not exists
- Task 8.1.2: demonstrates my way of running concurrent inserts into different tables
- Task 9.2.1: demonstrates my way to insert data to same tables and observe them using different transaction and notice the issues they cause
- Task 9.2.2: demonstrates my way to insert data to same tables and observe them using different transaction and notice the issues they cause
- Task 9.1.1: demonstrates my way to insert data to same tables and observe them using different transaction and notice the issues they cause
- Task 10.2.1: demonstrates my way to run join and determine what steps database actually takes to query
- Task 10.2.2: demonstrates my way to run query and determine what analyse does
- Task 10.2.3: demonstrates my way to run query and determine what steps database actually takes to access the rows
- Task 10.2.4: demonstrates my way to run query and determine what steps database actually takes to access the rows
- Task 11.2.1: demonstrates my way of querying a database
- Task 11.2.2: demonstrates my way of inserting into a database

Task 11.2.3: demonstrates my way of updating a database

Test: demonstrates all the things I learnt in this course regarding this ILO, and the efficiency I have in utilizing them under severe time pressure

Custom database task: demonstrates all the things I have learnt regarding this ILO from this course

Research project task: demonstrates all the things I have learnt regarding this ILO from both this course and also beyond

Reflection

The most important things I learnt:

Before this course I didn't know what database actually was and had instead assumed that all websites just directly stored all of their data on their servers as files. Thus learning about different types of data, databases, querying, etc has really opened my eyes and widened my understanding. But even so, I would actually regard that as my second most important thing in this course.

For the most important thing, I believe it is "endurance" and "precision". There has been several times when the questions given in database tasks were asking for simple things. But even so, the commands I wrote to execute them didn't work as intended, either due to subtle syntax or logical errors. This usually led me to work on the same task for hours on end, pin pointing exactly what was going wrong and then correcting my mistakes and noting it down for future use. Thus, in the end, I not only developed the skill to work on a task for hours on end, but also learnt new and interesting things that could be done in databases, alongside the exact way/procedure to do them.

The things that helped me most were:

Firstly there were the lectures, which was present in both slide and video form. This was an absolute blessing as it allowed me choose any time of the day, read and underline important aspects from the slide handouts, then go through the video and recheck my understanding.

Second were the practice quizzes, which were given in each week's tasks. These helped me out a lot in verifying whether I do understand the concepts properly or not. But I argue it would have been better if there were answer alongside reasoning given for the mistakes we made upon submitting and if the retries gave new and different questions from the same week's concepts (instead of just repeating the same question)

Thirdly were the videos regarding setups that were given from the start of the semester. These helped me download all the needed software early on and work out ways to use them before tutorials and thus helped me not make a fool of myself during the tutes.

Last but not the least, I liked the fact every week's topics were open from the start. This allowed me to finish all the tasks in advance (during my mid semester break) which in turn reduced the amount of pressure I have had this semester.

I found the following topics particularly challenging:

For me I found regex particularly challenging. But it wasn't that I didn't understand which pattern to use, instead I was having trouble in using Linux in general as I had never used anything like that before. But by the end of the 2nd week, I had practised it several times and thus got the hang of how to use of it accurately.

In the later weeks, I had had problems regarding transaction and the anomalies. But that was mainly because I had done them in advance and the material hadn't been taught during class yet, at that time. Later on during week 9 and 10 tutes, my tutor went over them in details which finally helped me understand how to find out which anomaly it is and learn the

interesting way of reading transactions (i.e. making tables and placing read and write in specific positions to see what was really happening)

I found the following topics particularly interesting:

Truth to be told almost everything here was new for me and thus I found everything to be interesting! This includes different types of data, ways to filter data, problems regarding data type (structured, semi-structured, unstructured) and data storage, XML and JSON ways of writing data and querying, creating ER model using Chen's diagram and Crows feet, different levels of normalizing, ways to set datatypes and defaults, modifying and deleting tables and databases and their restrictions, commit and rollback, projection, selections, joins (inner and outer) and aggregates, idea of nulls and issues it cause in querying, ways to read transactions and set isolation levels to avoid anomalies for concurrent ones, looking at how queries actually work in depth (query strategy, search complexity, etc.), indexing and views, optimizations, NOSQL and MYSQL, different types of NOSQL databases and their uses, etc.

Honestly I would have actually liked it more if there were more content regarding them in each slide as they were just that interesting.

I feel I learnt these topics, concepts, and/or tools really well:

I believe I have learnt the use of all tools and concepts taught in this unit quite well. But most of all, I believe I have best learnt the use of MariaDB. This is basically because there were more tasks regarding MYSQL and MariaDB was the database that we used to code in MYSQL in this unit. Thus, after working on it for weeks (including doing my custom database work on it and test running different implementations on it for my research project), I can say I almost know it like the back of my hand.

I still need to work on the following areas:

Although I have learnt all of the concepts quite well, I still usually have trouble performing normalization, especially 2NF. Instead I would usually end up converting 1NF into 3NF directly by combining all the work that needs to be done to make it from 1NF to 2NF and from 2NF to 3NF. Thus I believe I have to work on this area and understand the exact difference between 2NF and 3NF so that I don't convert a table into 3NF when the question just asks me to make it 2NF.

My progress in this unit was:



Here you can see that my curve had been going down steadily at first, then it fluctuated slightly before flat lining during semester break and then again fluctuating as it tended downwards.

At first the line had been going steadily down as then I was going my week's work on the day before the tute and getting them checked during the tute timing. At that time, my work didn't

have used to have any mistakes as tasks were easy and as they were related to that week's lecture materials.

During my semester break, I had actually completed all of the rest of tasks in advance by quickly watching though recordings, making notes and using them to answer the questions. But, during those times, there weren't any tutor to help me (as it was their vacation after all and so no tute) and thus some of my answers were not accurate or up to the set standard.

Thus, in the later weeks, when my tutors checked my tasks (he had checked each week's tasks once that week has arrived), he noticed that I had lots of silly mistakes in them and thus told me to correct them. After I corrected and resubmitted them, he would check them before tute on the concurrent week and by then my task would be perfect (as he would explain the concepts in details during his tute, which would help me clear misconceptions and realise my mistakes). Thus you can see the lines fluctuating after the mid semester vacation, while it slowly levelled down.

Now, at the very end of the semester, only my custom database task and research project is left to be checked (both of which will be checked after portfolio submission). Thus, although it shows 20% is left in graph, all of my tasks are actually fully complete.

This unit will help me in the future:

Well currently I am not sure which way I will go to be honest. I only have the desire to be in an industry related to computer science and mainly plan on focusing and developing my skills for becoming a cyber-security expert. So, I am not sure where I will use my database skills in as depth as I learnt in here. But I will probably keep on making/ playing around with these software, designing different database in not only Mariadb and MongoDB, but also on other open source databases (like others from Relational, NOSQL, Cloud, Object oriented, etc. type of databases). Thus I am sure the knowledge, skills and techniques I have obtained in this unit will help me lot when working with those databases.

If I did this unit again I would do the following things differently:

If I did it again, I would try finishing all the tasks on the very first week and also get them checked off on that week, by continuously persuading my tutor. This would allow me to get more time organising and creating the best custom database work and research project that I can make.