UNIVERSITY OF BIRMINGHAM | BIRMINGHAM BUSINESS SCHOOL

Student ID Number(s): 2655175

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Module: Micro Courses Certification

Name of Tutor: Mr Robert Fleming

Assignment Title: Micro-Courses Journal

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Actual Page Count: 6

Extension: N **Extension Due Date:**

I do wish my assignment to be considered for including as an exemplar in the **School Bank of Assessed Work.**

The purpose of this template is to ensure you receive targeted feedback that will support your learning. It is a requirement to complete to complete all 3 sections, and to include this completed template as the first page of every assignment that is submitted for marking (your School will advise on exceptions).
Section One: Reflecting on the feedback that I have received on previous assessments, the following issues/topics have been identified as areas for improvement: *NB – for first year students/PGTs in the first term, this refers to assessments in your previous institution* • I should add precisely the information required in the assignment • Write better reflective analysis
Section Two: In this assignment, I have attempted to act on previous feedback in the following ways • I have added precisely the necessary information that was required in this assignment • I wrote good reflective analysis, praising and criticizing the course whereever required, according to my presonal experience

Introduction

Upskilling and constant learning are necessary to be competitive in the quickly changing employment environment of today. I have set out on a path to acquire a varied range of skills and knowledge through numerous courses related to my field of study, as a proactive learner dedicated to professional advancement. The purpose of this report is to give a summary of the coursework I have completed, emphasizing the most important lessons learned, the skills I have gained, and how they relate to my future professional goals.

I've gone beyond the fundamentals and taken specific courses that fit my interests and professional objectives. Through these courses, I have been able to expand my knowledge in specific areas, such as Python, SQL, Tableau, Excel etc. which has helped me stand out in the competitive employment market.

Now, I would individually include certifications of all courses with explaination of how these courses will help to progress in my career path.

1) Python Foundations for Data Analyis & Business Intelligence

I first started this course with little knowledge of Python before hand and after completing this course I am confident that now I can use Python for Business and Data Analysis.

Things I like about Python language is, it is very *easy* to learn and is readable. *Positives* i can take from learnig this course through Udemy is that the instructors at Udemy provided excercises of good '*difficulty*' level after each video lecture. As the course progressed, the level of questions kept on incresing. I just held to the tendency of not to look at the answers even if I wasn't able to solve it after multiple trails. This improved my question solving skills and abilities.

However, there were areas where this course could have been better like they could have introduced more interactive components to improve learning and engagement, like group projects or live coding sessions so that I could test my ability. Another problem that I faced was that I could not copy-paste the questions directly on the python coding platform as questions were presented within the video itself and I had to write whole questions again on the coding platform before going for the solutions. One improvement I can suggest on '*Udemy*' platform is not to make answers easily accessible. They can introduce a certain limit of *'minimum'* trails that a person has to perform in order to view the answers. Also the video lectures were too paced up and the instructor could have gone with the slower pace.

Challenges faced in this course and how I overcame them:

As the course progressed, The *"Python Foundations for Data Analysis & Business Intelligence"* course pushed my problem-solving abilities, and dedication to study through a variety of problems.
Data manipulation techniques became more complex as the course went on, especially with the introduction of complex Python modules like *NumPy* and *Pandas*. I embraced hands-on learning and put a lot of effort into the course's coding assignments and projects in order to overcome this obstacle. I like the *'Question'* forum of Udemy where users can directly ask

the questions in which they are feeling doubtful. They are answered by either other students or the instructors teaching on the platform.

2) My SQL for Business Analytics and Business Intelligence

The course "MySQL for Business Analytics and Business Intelligence" has been instrumental in enhancing my SQL skills to meet industry standards. I learned the art of generating advanced SQL queries that allow me to access, modify, and examine data kept in MySQL databases. Numerous SQL features were covered in the course, such as *joins, subqueries, stored procedures, data aggregation (GROUP BY, HAVING), data manipulation (SELECT, INSERT, UPDATE, DELETE),* and more.

Overall, the course was really good in mastering SQL skills. Instructors were great in their teaching abilities and provide good excercises so that one can meet industry level standards. It let me test my knowledge and connect with other students, it included interactive components like quizzes, exercises, or discussion forums that can improve the learning process.I loved the chance to engage with the material and peers from the same course.

Talking about the negatives, the course goes from Beginner's level to 'Expert' real quick. As the course progresses, I tend to think, the level of complexity I was facing is relevant to my career field or not. The course lags a little in its relevancy in 'Business Analyst' job role due to its 'toughness' but again it was really good for someone to wants to master SQL. They could have introduced some levels in between stating what proportion of the course is for 'Business Analysis' and where the scope of the course goes beyond it.
The community support on this course was limited. Learning becomes more enjoyable when you meet with other fellow peers from the course but unfortunately I wasn't able to meet connect with any other person of relevance.

Challenges faced in this course and how I overcame them:

Mastering topics such as *data modeling, indexing, normalization,* and *transaction management* posed a significant challenge. To overcome this challenge, I adopted a hands-on approach, actively working on database design projects and practical exercises provided in the course. I feel the more variety of questions you solve, more expert you will be in the subject.

Writing efficient and optimized queries, designing appropriate indexes, and *tuning database configurations* were crucial for enhancing query execution times and improving overall database performance. I leveraged *online forums* and *community resources* from other platforms to seek guidance from experienced SQL developers and database administrators. However, I felt there was a lot of *'time delay'* in acquiring answers of my queries. 'Udemy' should work on its support forum where they can improve their response time. SQL is a famous query language and there were various *'Telegram'* goups availabe on this language so I joined various educational 'Telegram' groups that help in solving SQL queries whenever I needed

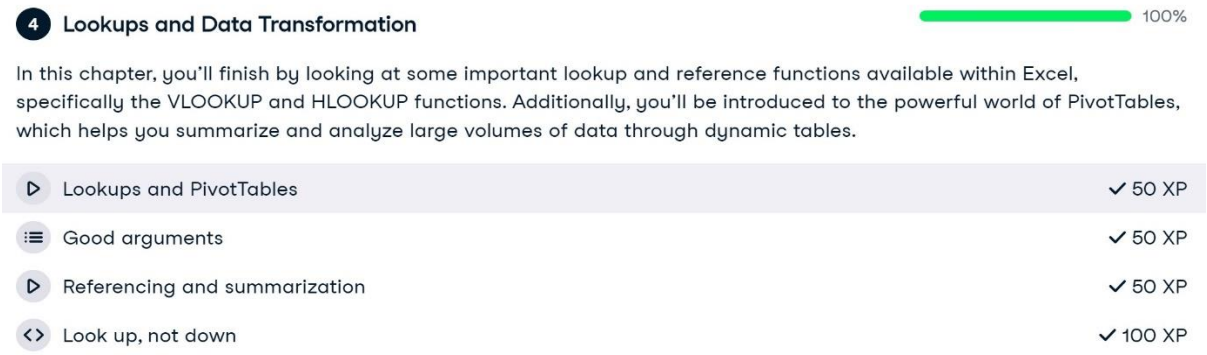
3) Data Preparation in Excel

I learned how to organize data tables, write insightful reports and summaries. I found this Excel course very simple but really important and helpful as one needs to pre-process the original dataset before extracting the information from it. The Datacamp offers interface where they provide datasets to work on and I do not have to work separately in Excel on those datasets. There was no fear of losing your progress in the course as all the datasets were pre-uploaded with the progress to the current time, just in case you accidentally close the Datacamp interface. This course posed certain challenges at times but I was able to conquer them easily by putting some efforts in it.

A constructive criticism I can mention about this course was that this course could have gone to more depth and shoud have introduced some more features of excel that can be handy in the long run.

Challenges faced in this course and how I overcame them:

Understanding how to clean, manipulate, and organize data effectively required a deep understanding of Excel functionalities and formulas. I particularly had problem with *VLOOKUP* function of excel. Applying this function on the same worksheet was good but I found it troublesome to apply this function while referencing other worksheets. To address this challenge, I engaged with course materials thoroughly, practicing each technique extensively through hands-on exercises and real-world examples.



Working with large and unstructured datasets posed another significant challenge. With large datasets, it becomes tough to judge what exact changes are required so that one can work on datasets later. Its all intellectual game and one should know where to stop. To identify the changes that you have to make and plan the procedure of your operation carefully becomes necessity. I broke down complex data preparation tasks into smaller, manageable steps. By applying a systematic approach and leveraging Excel's features such as *filtering, sorting,* and *conditional formatting,* I was able to effectively process and clean large datasets.

4) Data Analysis in Excel

The *"Data Analysis in Excel"* course elevates Excel proficiency to industry standards by imparting advanced skills across various domains. Commenting on positive aspects of the course, I learnt complex functions like *VLOOKUP, INDEX-MATCH, SUMIFS,* and *COUNTIFS* for efficient data *manipulation* and *analysis*. I mastered *PivotTables* and

PivotCharts which enabled me to summarize and visualize data effectively. Statistical analysis capabilities are honed through the introduction of functions and tools for *descriptive statistics*, *regression analysis* and *hypothesis* testing.

Commenting on negative aspects of the course, I found explainations about the course not up to the mark. The lectures were *sped up* and detailed explainations were missing from the lectures. Many a times, I had to look the *YouTube* tutorials to gain clear understanding. There were topics that would have been given more time like *'referencing'* data from other sheets within the workbook. I would like to comment on forecasting techniques of excel. I found the forecasting graphs less expressive. There were less formatting options given in Excel and graphic quality of graphs wasn't good as compared to *Tableau*.

Challenges faced in this course and how I overcame them:

One of the primary challenges I encountered was the *complexity of data analysis* techniques in Excel. Understanding and applying advanced statistical and analytical functions required a deep understanding of Excel's capabilities and functionalities. To address this challenge, I engaged with course materials extensively, practicing each technique rigorously through *hands-on exercises* and *real-world examples of datasets*.

5) Creating Dashboards in Tableau

I liked that they gave explaination on how to view my dashboards on different platforms like Tablet, phone, mobile etc. It also taught me how to *review* and *share* dashboards offline. Tableau provided me with very wide array of formatting options that were very handy to use. This course offered tableau interface on Datacamp's platform itself so I didn't need to open Tabelau and switch betweem tabs again and again to perform my excercises.

Addding constructive criticism, the scope of this course remained very narrow in its applications. This course should have focussed on some basic data preparation techniques in Tableau to pre-work on data before creating dashboards. There were advanced topics in relation to creating dashboards that could have been introduced like conneting web pages to the sheets of the dashboards. Tableau can also offer *customizable themes* and *templates* allowing the operators to style in a more better way. Some light should have thrown on usage of effective colors and styling techniques to use to make worksheets and dashboards more presentable and visually appealing as these have great psychological impacts on viewers.

Challenges faced in this course and how I overcame them:

Undertaking the course *"Creating Dashboards in Tableau"* presented me with various challenges that tested my problem-solving skills, creativity, and adaptability.
While working with filters in Tableau, I found it complex at times to enable filter of one sheet in the dashboard to others. It use to work improperly until I rewatched the tutorial video to find proper technique to do so.
Another challenge I faced was to create calculated fields with the help of coding in Tableau. Many times I needed some fields to show particular information on the dashboard. For that I learnt various functions in Tableau from *YouTube* tutorial videos as there was nothing mentioned related to it within the actual course, with the help of which we can create our own fields to display. I personally think this course could have gone one level up to introduce the concept of creating fields yourself if in need to avoid any difficulty but this course remained on the very *'basic'* level.

6) Intermediate SQL

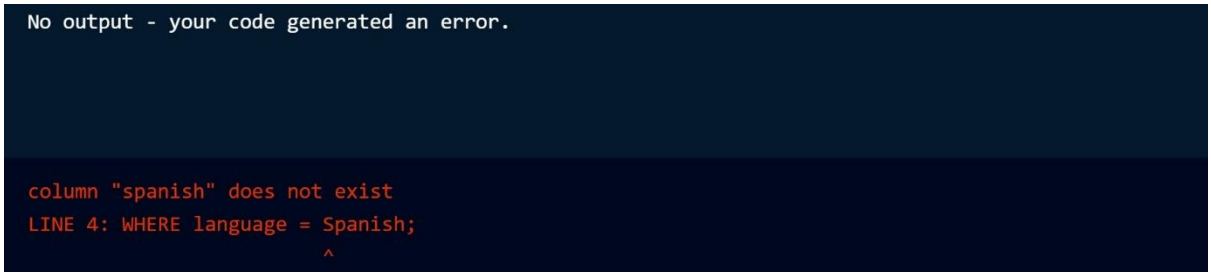
Advanced data analysis techniques learned in SQL, such as aggregation, subqueries, and window functions, can be translated into Excel using *pivot tables, array formulas,* and *advanced functions* like *SUMIFS* and *COUNTIFS.* Overall, the skills acquired in the *"Intermediate SQL"* course empower Excel users to perform complex data analysis tasks more effectively, enhancing their competitiveness in the industry.

This course focussed on basics of SQL and was a good decision to take as i efficiently revised my SQL basics. This course is good for someone who wants to learn and revise the SQL basics. This course provides with good excercises that at times challenged me to use my intellect to good ability to find solutions.

Reflecting on negative aspects of the course, this course should have focusssed on optimizing the written queries to optimal performance to prevent any delays in its execution. These tricks will come handy when I'll deak with large datasets.

Challenges faced in this course and how I overcame them:

Few times I received a *syntax error* when I ran the code. It was hard to find the source of the error. While correcting that I found out, even small changes in the alignment of the code returns an error. So next time while coding I had to keep in mind the alignemnt of various functions of the code and ensure that it is correct.



I figured about my error using ChatGpt. I personally feel, some form of support should have been provided from the support group of Datacamp to rectify the errors that the people are

facing from the course. They can work on their support team to make the platform more dynamic for the users.

Job roles related to the chosen courses of SQL, Python, Excel and Tableau:

SQL for BI	Python for BI	Excel	Tableau
Database Administrator	Data Scientist	Financial Analyst	BI Developer
Data Analyst	Data Engineer	Business Analyst	Data Analyst
BI Analyst	Quantitative Aalyst	Operations Analyst	Business Analyst
Data Engineer	Research Analyst	Accountant	Dashboard Designer
SQL Developer	Business Analyst	Project Manager	Reporting Analyst
Data Scientist	ML Engineer	Sales Analyst	Data Scientist

These courses can definitely open gates to some career fields that require specialization in a particular course For example: SQL for SQL Developer, Python for Machine Learning Engineer, Excel for Accountant, Tableau for Data Visualization expert but combining the knowledge and abilities i got from these courses will help me land a better career because many positions in the data-driven world of today demand expertise in several fields.

A Data scientist, Business Analyst, Business Intelligence Developer, Database Administrator, Financial Analyst etc. might, for instance, utilize Tableau to create visually appealing worksheets and interactive dashboards with enormous *formatting* options in Tableau, Excel for *data cleaning, data formatting, date calculation, data analysis, data visualization* and *reporting*, Python for *data extraction, cleaning, exploratory data analysis, reporting* and *statistical analysis* and finally SQL for *data retrieval, data exploration, data aggregation, summarization* and *manipulation* of database queries.

How the chosen courses align with my chosen career path

Business analysts need to be proficient in SQL, Python, Tableau, and Excel in order to analyze, display, and present data insights in a way that supports organizational decision-making processes. Expertise in SQL enables analysts to *extract, modify* and *combine* data from databases, enabling extensive *analysis* and investigation of big datasets. Python offers robust *statistical analysis, predictive modeling* and *data cleansing* tools that enable analysts to do sophisticated analytics, pre-process data, and create machine learning models for trend and prediction forecasting. With Tableau's visualization features, analysts can produce interactive reports and dashboards that visually convey insights, encouraging stakeholder involvement and supporting data-driven decision-making. With a vast array of features and functions for *exploratory data analysis, reporting* and *data integration* activities, Excel is a flexible tool for *data analysis, reporting* and *modeling*. By utilizing these abilities, Business Analysts may successfully communicate findings to *stakeholders*, uncover trends and patterns in data, and extract actionable insights that support organizational goals. This helps to facilitate well-informed decision-making.