Assignment 3

E-portfolio Link on GitHub:

https://pjneelam.github.io/pjneelam.eportfolio/#Module2

Submission Date: 1 November 2021

Tutor: Dr Oliver Buckley

Question: Your e-portfolio content should be presented in a structured, logical way. The total word count for this assignment is 2,500.

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1. Introduction

1.1. A few words about me

Holder of degrees in French languages and literatures, I live in the island of Mauritius and I have been teaching for the last sixteen years. In 2016/2017, I came across the field of digital humanities, which is at the intersection of the digital technologies and the humanities fields. In 2018, I initiated the setting up of a Centre for Digital Humanities at my university, and despite the support of computer scientist colleagues, I find that I am missing several important concepts in order to move forward with various projects. As a cross-disciplinary field, 'digital humanities' tends to encourage an immersion in the field of computer science even in research projects in artificial intelligence, natural language processing and big data among others.

Indeed, during my previous studies in language/literature, ICT courses were non-existent, and I have found it difficult to carry out a few projects, which required knowledge of certain ICT tools. I have taken a few online courses with Texas A&M University, EdX, Future Learn and UDEMY on Text Encoding Initiative, R Language etc., but I find that a beginner, like me need more structure to understand certain concepts and the different ways of integrating and using ICT in my research projects (in particular programming and gamification). In addition to this, a degree from a recognised university will also give more credibility to my work.

This is one of the reasons that has led me to decide to enrol in a PG Certificate in Computer Science in 2021: become knowledgeable in the field and use this knowledge and know-how in my field (Mauritian/Francophone literature). ICT courses are, in my opinion, a prerequisite for all existing and future professional activities of the 21st

century, and those in the humanities cannot continue to stay away from the various technological tools, which can enable them to work differently and more efficiently.

For a non-IT person, this seems a daunting experience, but starting with the core modules of the PG Certificate is the first stepping stones towards my objective of gaining fundamental knowledge in computer science, web development and programming. This will hopefully lead me towards innovative and creative ideas and excellence in digital humanities research.

1.2. My e-portfolio

In this e-portfolio I will go over what I have learnt in this second Module, 'Object-Oriented Information System', my achievements and how I can apply my new knowledge in my field of study, that is the field of humanities/literature. I will also go through my main weaknesses and where I should improve.

Created using an HTML5-UP template, my e-portfolio can be accessed on GitHub: https://pjneelam.github.io/pjneelam.eportfolio/#Module2.

Figure 1: Homepage of my e-portfolio

This e-portfolio (Figure 1) was first created when I first embarked in this course. For Module 2, the page is divided into five main sections:

- Module Notes: this section contains all class notes, additional research work or exercises for each unit.
- Peer Discussions & Personal Reflections: there were two collaborative works to be submitted on the forum.
- Personal Works and Artefacts: in this section, all the diagrams and works done in class are available.
- Assignments done: there are three assignments for this module.
- Personal Self-Assessment: after two modules in computer science, it is important to do a self-evaluation and look at the achievements and ways of improvement.

1.3. Outline

For this assignment, Gibb's Reflective Cycle (see Figure 2) is used to explain my experiences, insights or understandings and evolution:

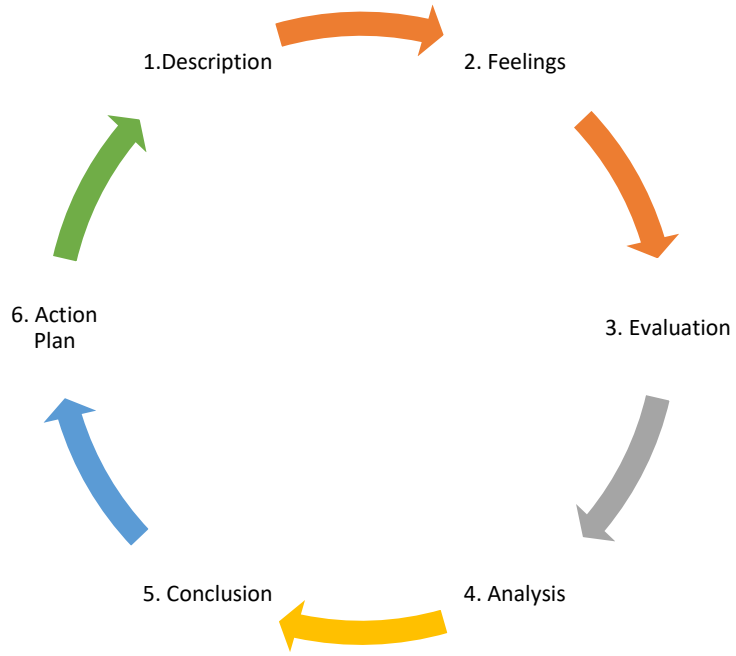


Figure 2: Gibb's Reflective Cycle (1988)

This reflective essay is divided into two main parts:

- Reflections on the different aspects of the course, which will give an evaluation of the activities/exercises/assignments done and the general online experience (contribution to the online forums, Codio platform etc.)
- Skills and Knowledge acquired.

2. Reflections on different aspects of the course

2.1. Note-Taking

The module, divided into units, is well-organised with explanations and activities. Therefore, as a student, it seems important to take notes on the different topics covered in class from the very beginning. The e-portfolio set on GitHub was certainly time-consuming to create but it helped in being more structured and methodical, and I could keep track of my additional readings and jot down aspects that did not seem clear. It became easier to revise and I was more productive, especially since the notes were easily accessible while doing the assignments.

It is also important to note that creating the e-portfolio made me develop my HTML skills as the page had to be set on GitHub:

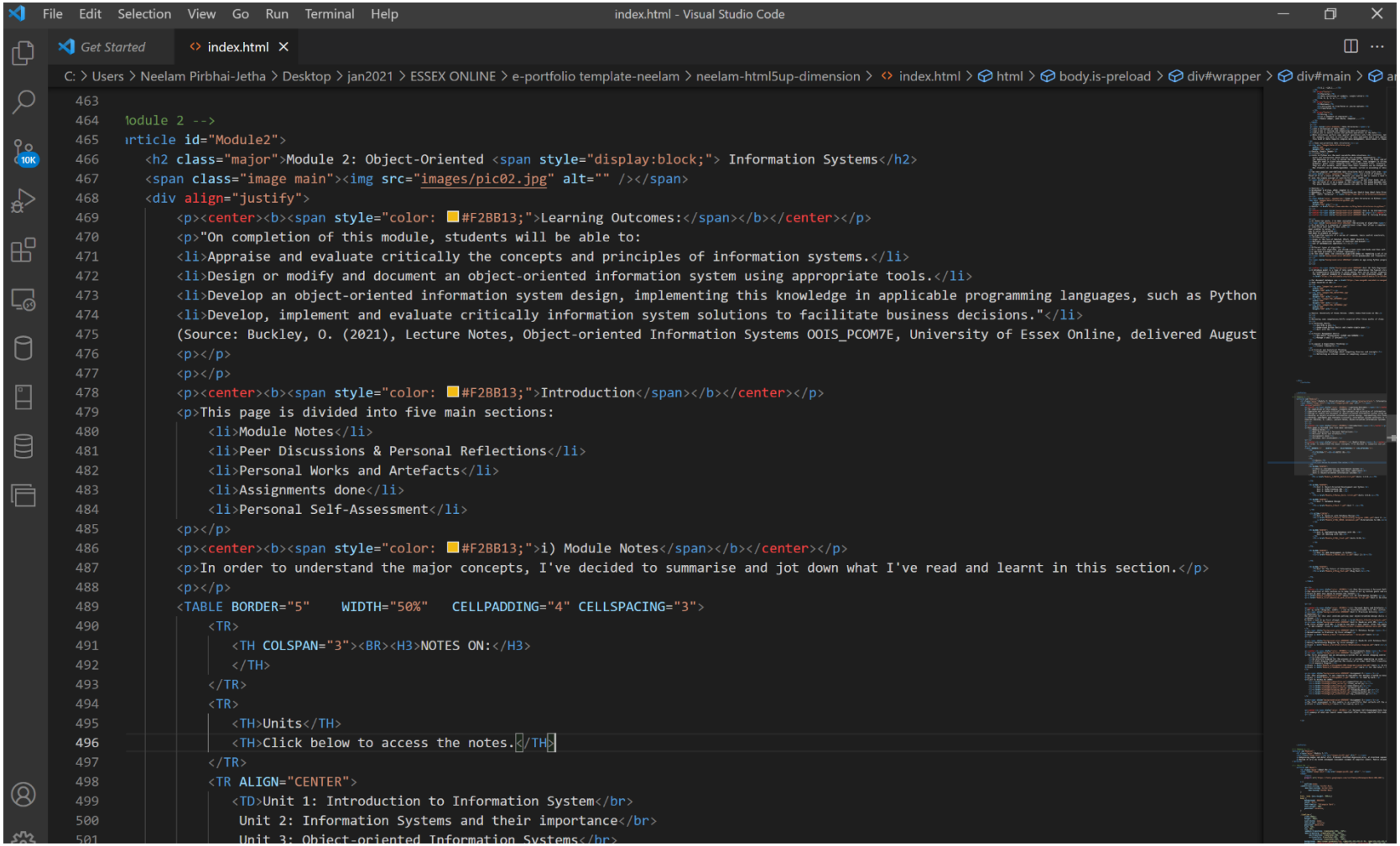
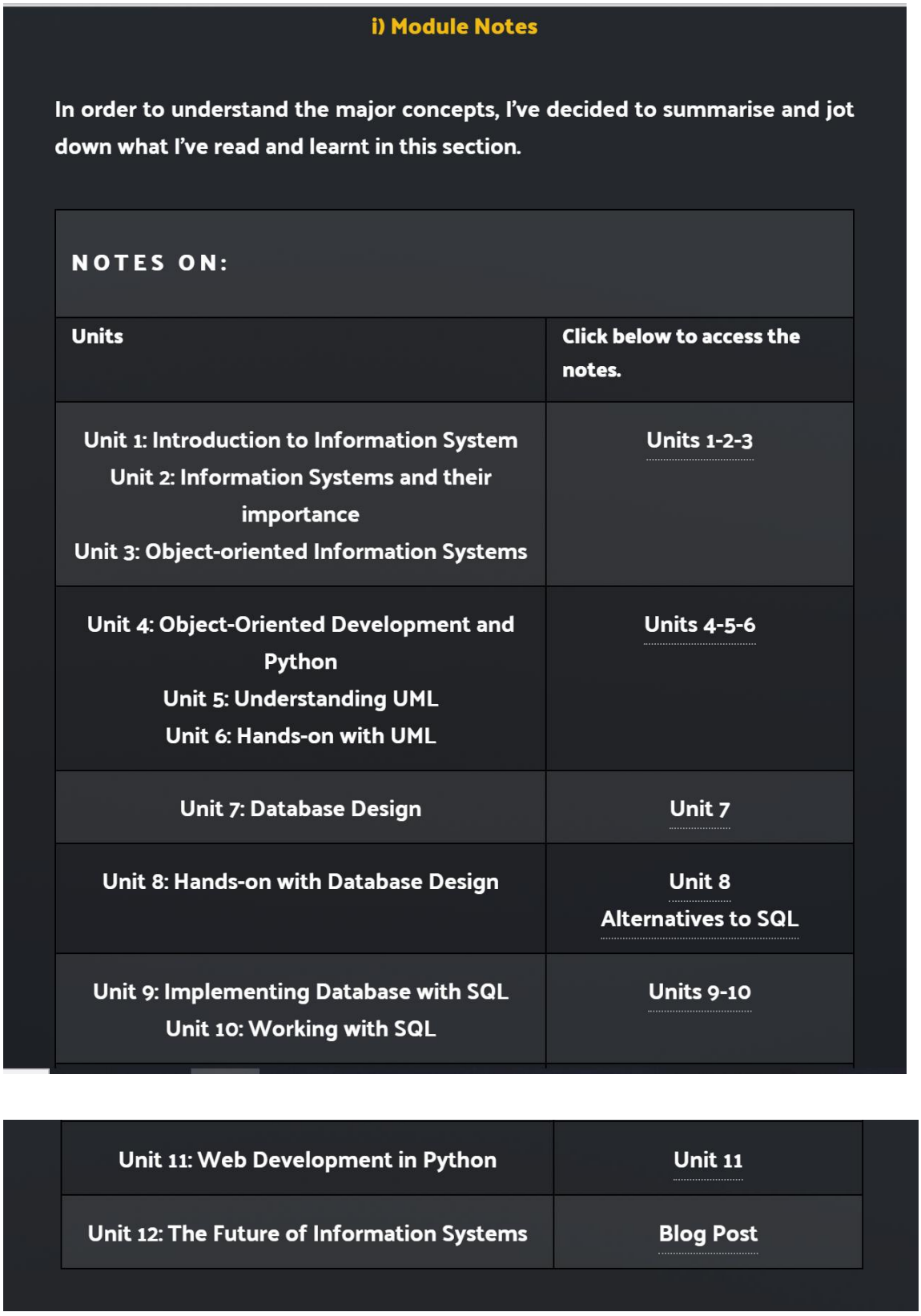


Figure 3: HTML codes for the e-portfolio, created on Visual Studio Code.

Below are some screenshots of the “Module Notes” section:



i) Module Notes

In order to understand the major concepts, I’ve decided to summarise and jot down what I’ve read and learnt in this section.

NOTES ON:	
Units	**Click below to access the notes.**
Unit 1: Introduction to Information System Unit 2: Information Systems and their importance Unit 3: Object-oriented Information Systems	Units 1-2-3
Unit 4: Object-Oriented Development and Python Unit 5: Understanding UML Unit 6: Hands-on with UML	Units 4-5-6
Unit 7: Database Design	Unit 7
Unit 8: Hands-on with Database Design	Unit 8 Alternatives to SQL
Unit 9: Implementing Database with SQL Unit 10: Working with SQL	Units 9-10
Unit 11: Web Development in Python	Unit 11
Unit 12: The Future of Information Systems	Blog Post

Figure 4: Notes on the units covered are accessible when clicked

In Module 1, I summarised the notes on the page itself. However, it did not look neat, and there might have been some important information which was missed. For Module 2, I decided to have a ‘cleaner’ presentation: pdf files are opened when the different units are clicked on the GitHub pages:

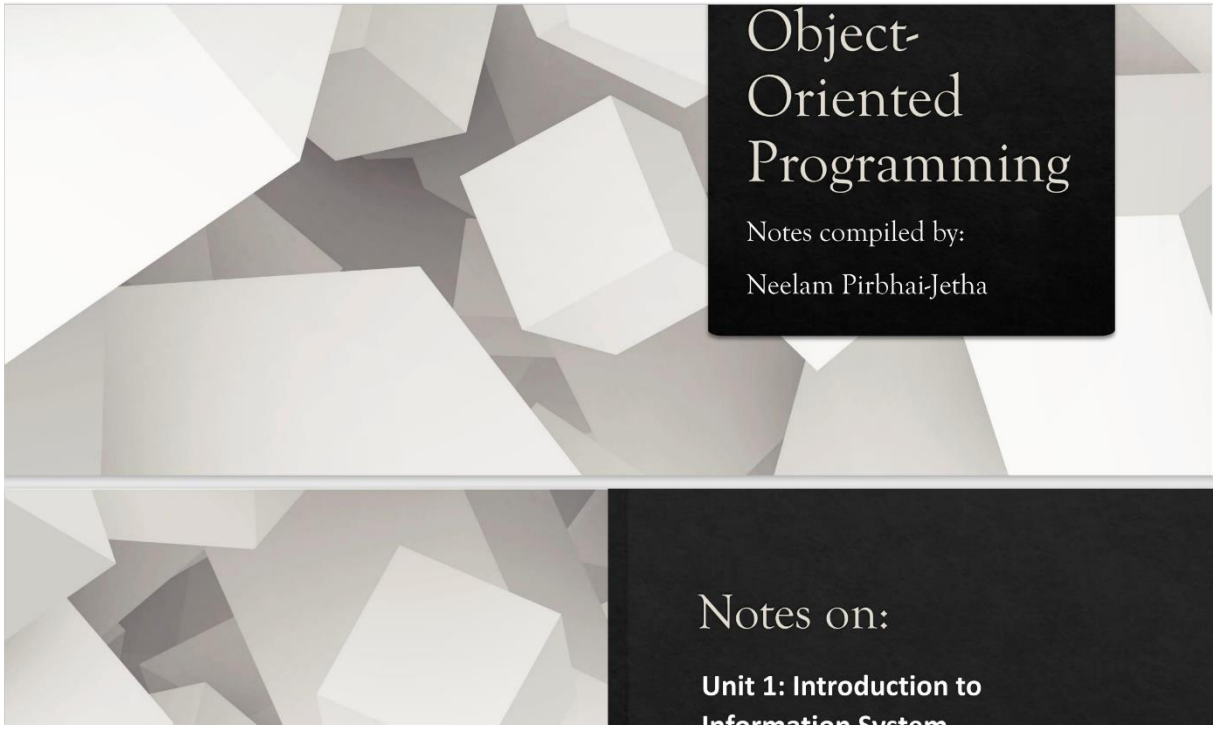


Figure 5: Screenshot of cover page of the pdf file of Units 1-2-3, opened from section “Module Notes”

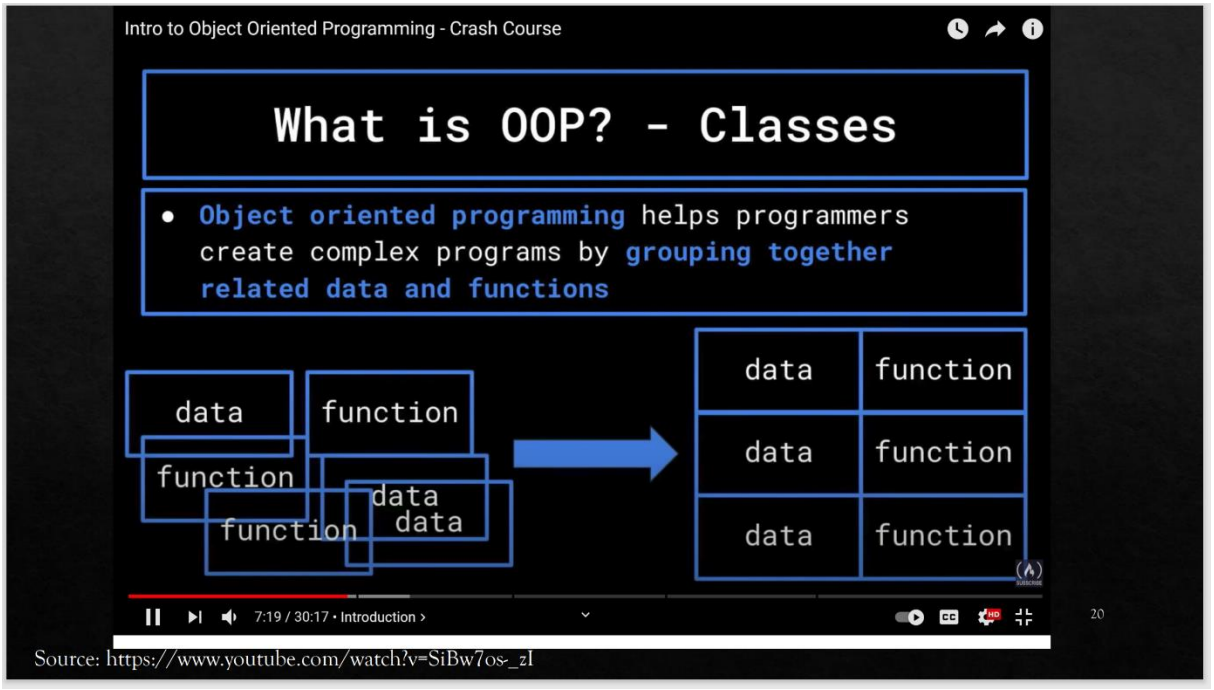


Figure 6: Additional Notes were taken on YouTube to complement my learning. All information is in the pdf files.

Conclusion & Action Plan for this section:

Note-taking has led me to achieve some of the module's learning outcomes such as 1) "appraise and evaluate critically the concepts and principles of information systems" and 2) "understand how to develop or design an object-oriented information system using appropriate tools" (Buckley, 2021).

My way of note-taking suits me normally. However, there was too much information, and it will better to summarise these notes in the form of graphical representations, schemas and figures for future modules.

2.2. Peer Discussions and Personal Reflections

One of the reasons I embarked on a PG Certificate in Computer Science with a university instead of continuing taking short online classes was to have constant supervision in a field which is quite new to me, and also to work and learn from others. The feeling of isolation was one of the fears I had. It is true that all the 'online' classmates are working adults, and it is difficult to spend as much time as we want supporting one another especially with the time difference. However, one of the classmates, Lukman, created a WhatsApp group for any issues related to the course and for words of encouragement.

The online forum also enabled me to go through what was being done, and see the thoughts of others. The posts of the first three units were quite insightful as they made me look for the importance of information systems, and since everyone was contributing, I discovered and learnt a lot.

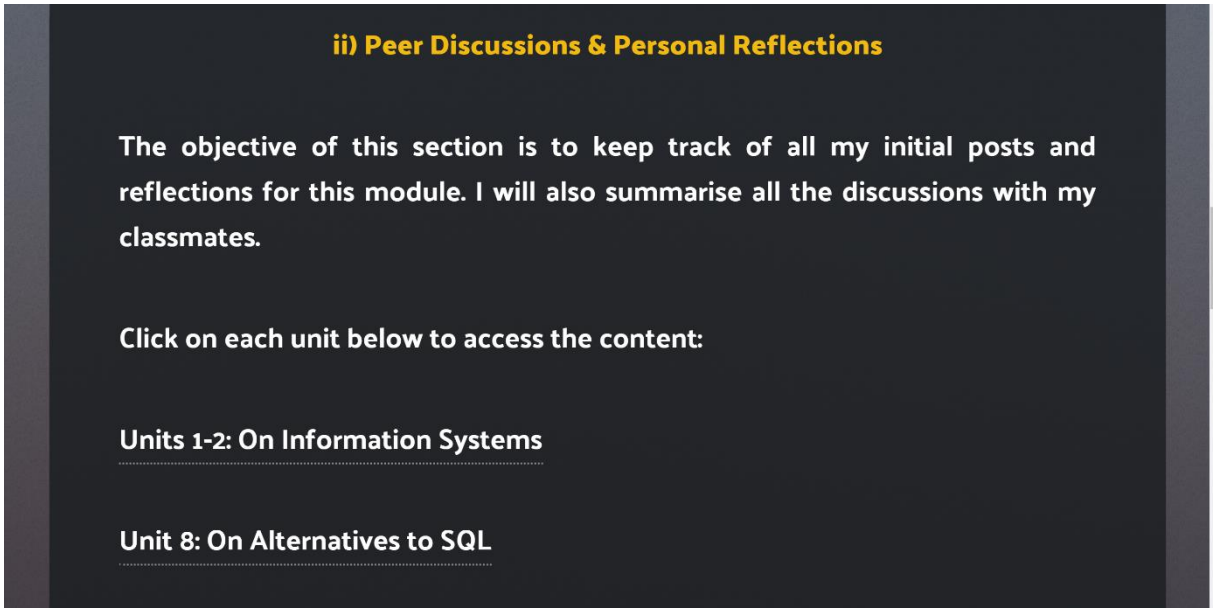


Figure 7: Screenshot of the Peer Discussions' section. Clicking on the unit will open the document as shown below.

The ‘summary post’ below was created to group all the classmates’ ideas on the causes and consequences of IS failures and some possible solutions.

Figure 8: Peer Discussion and Personal Reflections for Units 1-2-3

For Units 8, a post on ‘Alternatives to SQL’ was created. I tried to link the notions and understand the importance and usage of NoSQL in the field of digital humanities:

INITIAL POST

- With the dynamic technological environment, businesses are facing lots of challenges regarding data management. In fact, “high data velocity”, “data variety”, “data volume” and “data complexity” (Venkatramen et al, 2016) make it difficult to analyse data by using the tabular form of relational databases (SQL). NoSQL, which means "not only SQL" or “non-SQL”, is, therefore, considered as an alternative to relational databases, since it can store unstructured data. One example of NoSQL is when businesses perform big data analytics online, in order to analyse market trends, customer preferences and other information which can be beneficial for them (Venkatramen et al, 2016).
- My classmates, Grace, Michael and Wimal, have already clearly defined and explained NoSQL in their posts. I've just started reading on the topic today and I’ll try to add to this, by making references to the importance and usage of NoSQL in the field of digital humanities.
- According to researchers, it is quite difficult to illustrate “the figurative meaning of narratives through digital tools”, and since NoSQL is able to “group together multiple values” (Fan, 2018), it is becoming possible to associate, compare and juxtaposed data and to analyse literary content and figurative language. Furthermore, Franco Moretti, in his work *Graphs, Maps, Trees: Abstract Models for Literary History (2005),* illustrates the use of graphs and maps to visualise a large number of literary texts. This method is also known as “distant reading”. Indeed, graphs seem to model best how humanities researchers, especially those working with archival material, think about their data and its relationships (Blanke et al, 2013). Another term I’ve come across is culturomics, which “seeks to explore broad cultural trends through the computerized analysis of vast digital book archives, offering novel insights into the functioning of human society (Michel, *et al.*, 2011)” (cited in Leetaru, 2011). NoSQL is, therefore, a key element in analysing unstructured literary data.
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- Sources:
- Blanke, T. et al (2013). “Back to our data — Experiments with NoSQL technologies in the Humanities”. *IEEE International Conference on Big Data. Silicon Valley, USA (), 17–20*. Available from: doi:10.1109/BigData.2013.6691664 [Accessed 3 October 2021]
- Fan, L.T. (2018) “On the Value of Narratives in a Reflexive Digital Humanities.” Digital Studies/Le champ numérique 8(1): 5, 1–29. Available from: https://doi.org/10.16995/dscn.285 [Accessed 3 October 2021]
- Venkatramen et al (2016) “SQL Versus NoSQL Movement with Big Data Analytics”. *I.J. Information Technology and Computer Science*. 12, 59-66. Available from: 10.5815/ijitcs.2016.12.07 [Accessed 3 October 2021]
- Leetaru, H. (2011) “Culturomics 2.0: Forecasting large–scale human behavior using global news media tone in time and space”. *First Monday*, Volume 16, Number 9 - 5 Available from: https://firstmonday.org/ojs/index.php/fm/article/download/3663/3040 [Accessed 3 October 2021]

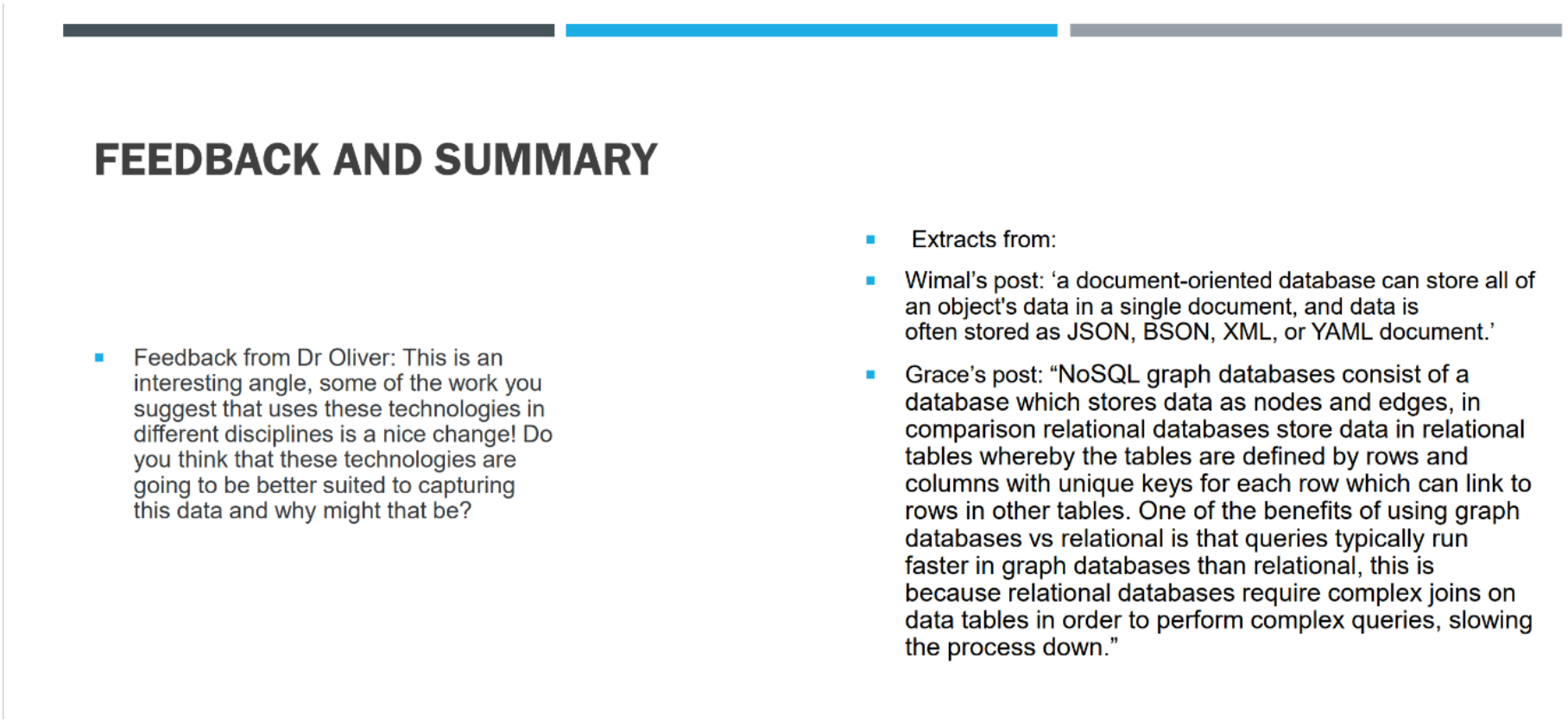


Figure 9: Screenshots of the posts on "Alternatives to SQL"

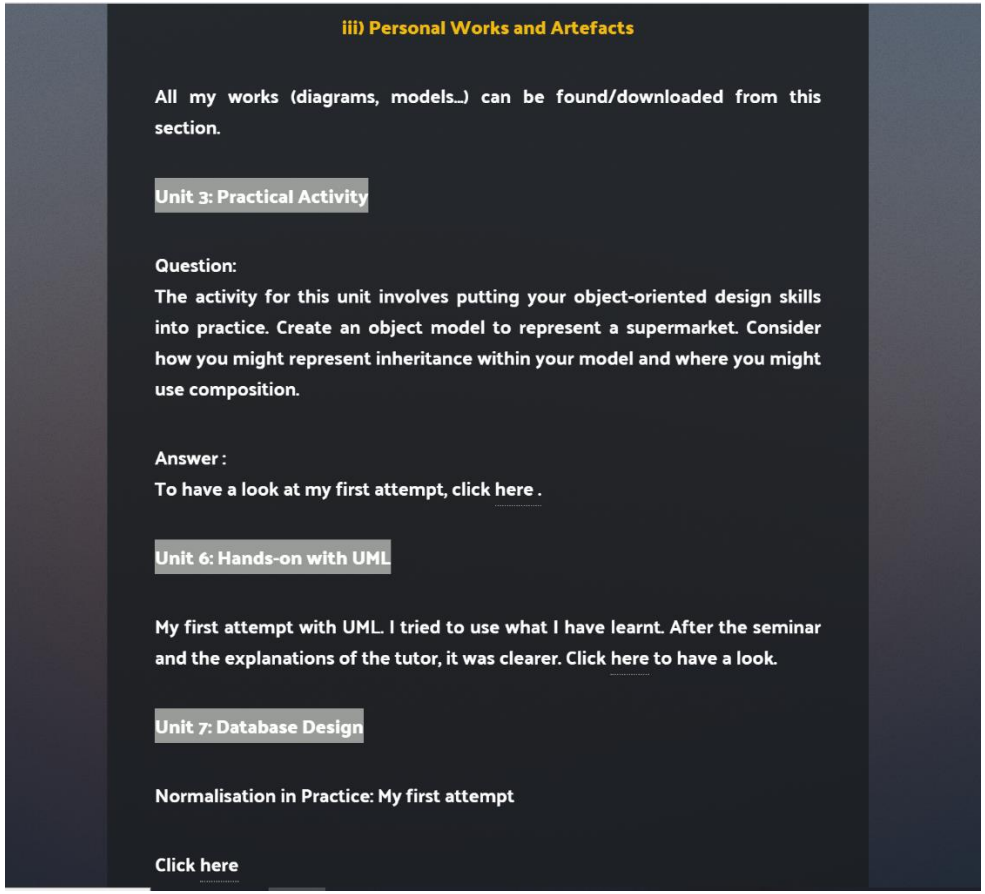
The feedback of the tutor, Dr Oliver Buckley, (“Do you think that these technologies are going to be better suited to capturing this data and why that might be?”) was quite challenging. It made me try to look for SQL and NoSQL in the field of digital humanities, and even if I have not come up with an answer yet, I personally think that SQL (relational database/tables) and NoSQL (graphs, XML etc.) are essential tools to capture the different types of data that digital humanists work with, and they give us different ways of visualising and analysing data.

Summary: According to me, the forum activities encourage interactions with students and tutors and create a sense of community (especially since we have never met one another). This space also develops our critical thinking skills while reading our classmates’ posts, discussing and sharing our thoughts.

Action Plan: I have tried to participate actively in the forum, but in the future, I would need to better plan the time spent on the forum. I will also have to read further on information systems and digital humanities.

2.3. Personal Works and Artefacts and Assignments

All my artefacts are available on the GitHub link, by clicking on the links. A few screenshots of the works done are given below:



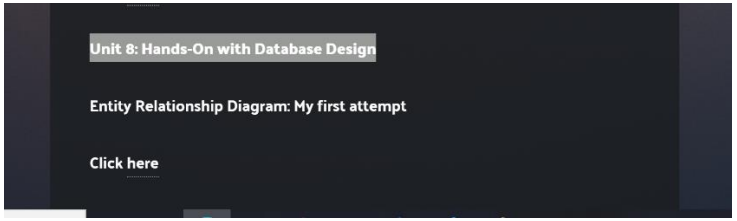


Figure 10: Screenshots of the Feedback's Section on my GitHub e-portfolio

Unit 3: Practical Activity Object-oriented Design: Brainstorming Session…

Use users (superclass) – then 2 subclasses (admin+customers)

Some of the ideas I jotted down before creating the model.

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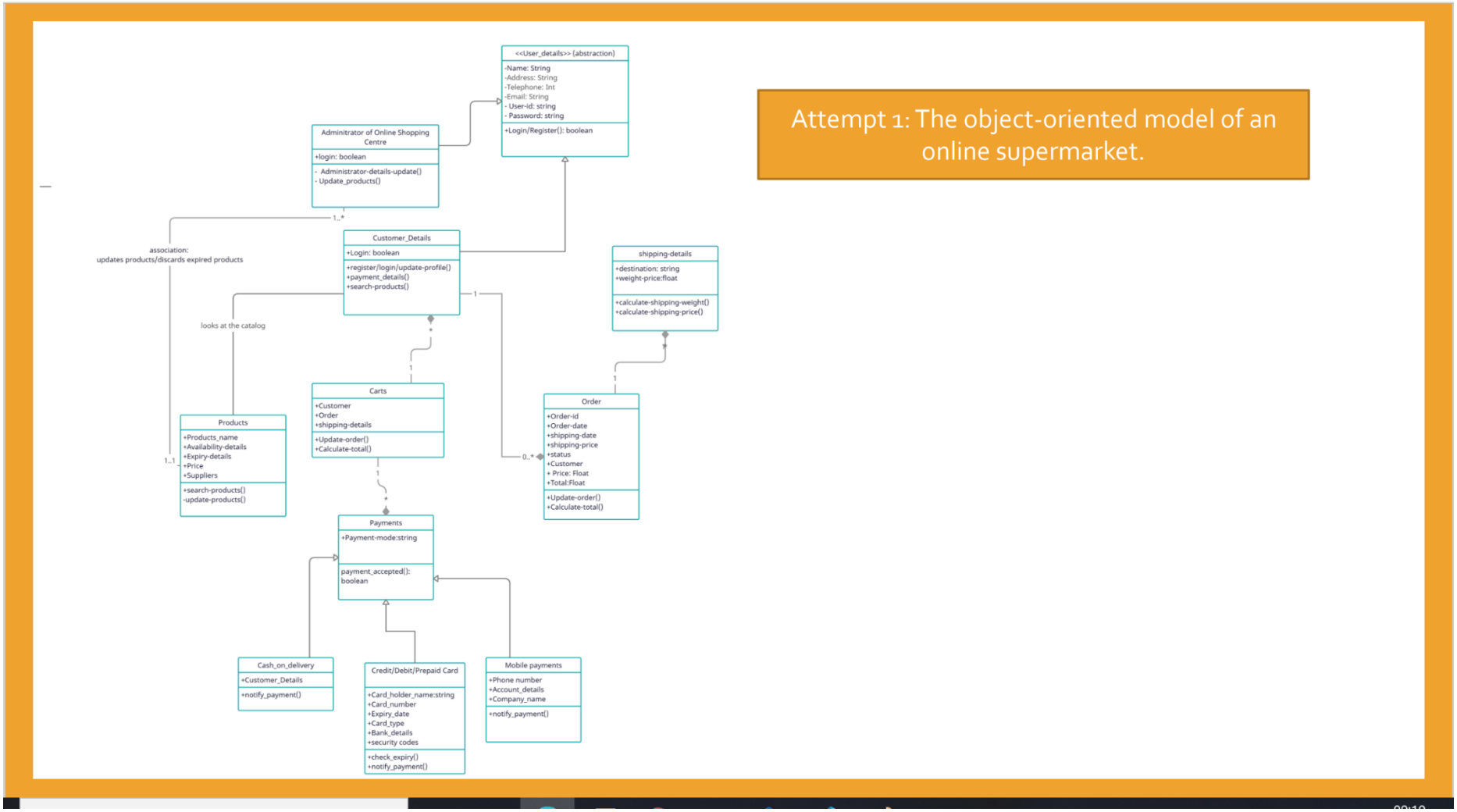


Figure 11: Object/Class Diagram: it was my first attempt at creating diagrams

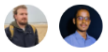
« Normalisation in practice

Neelam Pirbhai-Jetha

My first attempt...

34 days ago

4 replies



Last 29 days ago

After having gone through the course lecture, read a few chapters and watched a couple of YouTube videos on normalisation, I have tried to work on a table structure that conforms to the Third Normal Form.

As shown below, I have just added a new id column to most tables since an id seems to reduce repetitive information, and can be used as a key to show the relations.

For instance, a property_id was given as information on the property is needed in almost all tables.

I'm just not sure if there was a need to create an owner_id. But then, owners can change…

property_details

property_id	street	post-code	type	bed-rooms	price	pets_allowed	deposit_ amount

Figure 12: Screenshot - Part of the exercise on Normalisation in Practice. The whole work is online and in the e-portfolio.

1

Post by **Lukman Mohamed**

Peer Response

33 days ago

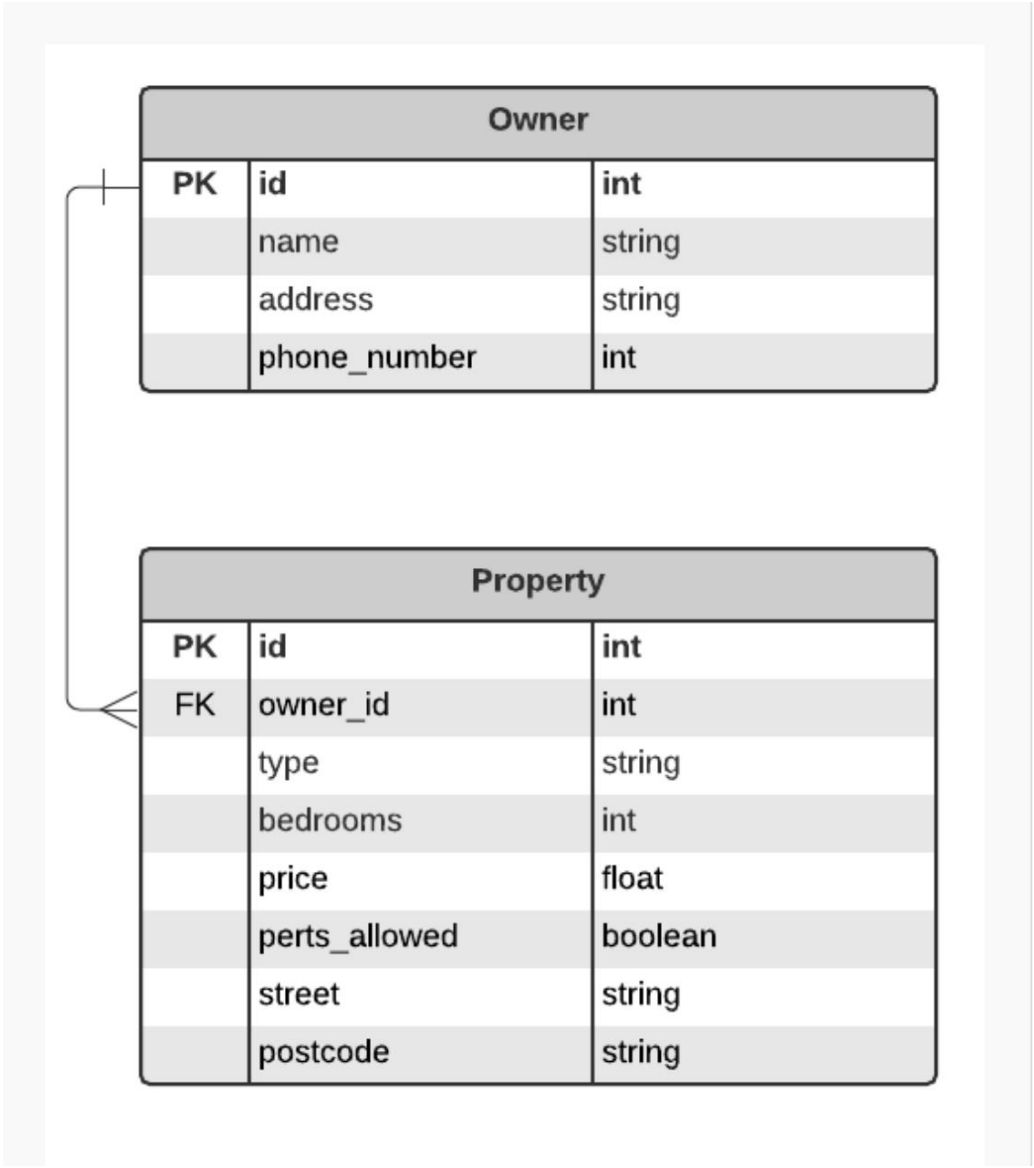
Hi Neelam,

Are you making a composite key for the 'owner_details' table?

Also, regarding your last question, do you mean if you are supposed to add an 'owner_id' column to the 'owner_details' table? I think you should.

If you are worried about changing owners, then maybe consider making a table only for 'owner_details' and then add the 'owner_id' to the 'property_details' table. And when you want to view the bigger picture, you can always use joins.

And when owners change, you can easily update it in the 'property_details' table.


Owner
PK
id
int
name
string
address
string
phone_number
int
Property
PK
id
int
FK
owner_id
int
type
string
bedrooms
int
price
float
perts_allowed
boolean
street
string
postcode
string

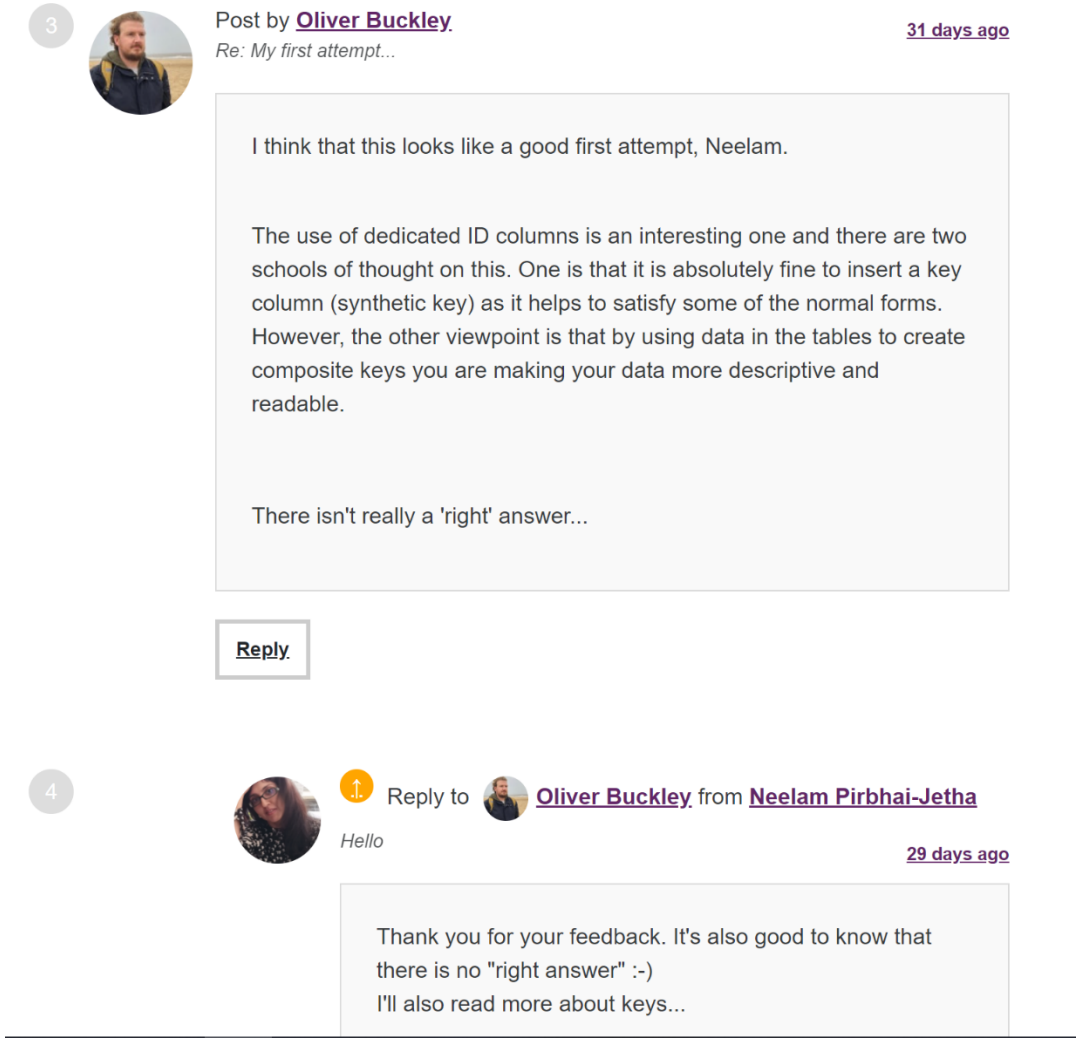
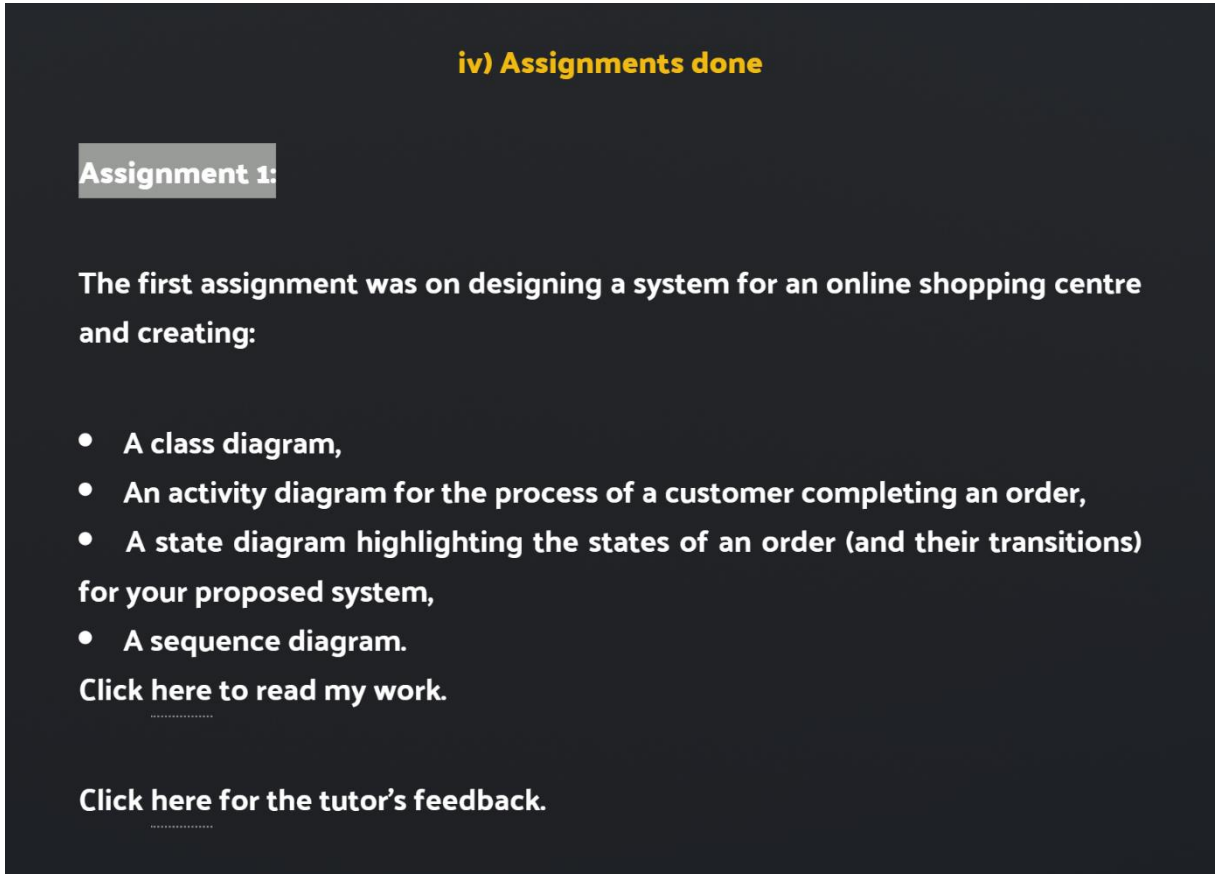


Figure 13: Feedback and Discussion about ID columns and keys

The assignments can also be accessed by clicking on the links in the e-portfolio. The feedback of the tutor for the first assignment is also available:



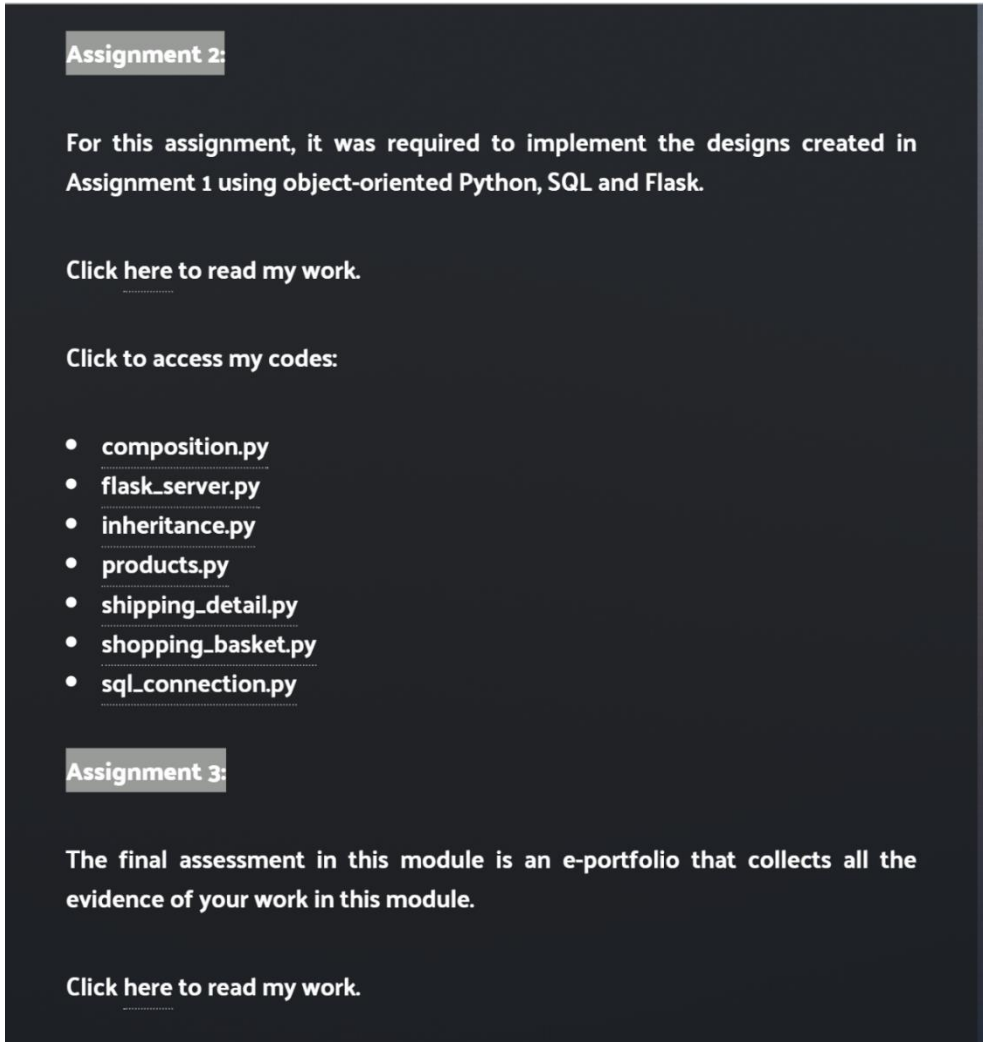


Figure 14: Links to the assignments

All my works, artefacts, and assignments are accessible online. In this section, I will try to analyse what I have learnt. Even if there is room for improvement, especially in my programming work, I have been able to:

- “Design or modify and document an object-oriented information system using appropriate tools.
- Develop an object-oriented information system design, implementing this knowledge in applicable programming languages, such as Python and SQL” (Buckley, 2021)

In Module 1, the Python classes were quite simple. Nevertheless, I was not at ease working on Object-Oriented Programming (OOP) in Python, an advanced topic in Module 2. But OOP is seen as a way to reduce code repetitions (and thus considered more sustainable) and create, store, analyse data. OOP with Python can be used in quantitative and qualitative research (Karsdorp, n.d.) in the humanities and mastering it will be an advantage.

I have really enjoyed working in SQL. Connecting SQL, Python and Flask was also quite a new experience. This knowledge will open new avenues for digital humanities research.

Action Plan: practice OOP and try to apply it to one of my projects in digital humanities.

2.4. Online Experience

The forum is seen as a user-friendly space/platform that encourages reflection and interaction, and enables learners to be more independent, while collaborating with peers. While discussing about a specific topic, students are able to produce creative, reflective texts and also to receive feedback from their peers. The forum also allows learners to see the evolution of their thinking / discussion (Kuo et al., 2017).

Codio was the online programming platform that was used in class. The notes and activities on the platform were very good and simplified the learning of new concepts. The activities available were an excellent way to practice coding. I particularly enjoyed learning SQL on Codio during Module 1 and Module 2.

However, personally speaking, I did not like the Codio platform at all: while working the exercises was fine, doing the assignments on the platforms was tedious and quite complicated. Moreover, I realised that I will not be able to do my personal projects on Codio after the course ends. Therefore, I learnt how to install Visual Studio Code for HTML and Python codes from YouTube. I also learnt how to download use MySQL Workbench, which is, according to me, more user-friendly. During Module 2, I spent too much time learning how to install and use alternative platforms, and this, unfortunately, had a negative impact on the time I spent on my second assignment.

3. Skills and Knowledge acquired

After another module in Computer Science, I have prepared my Personal and Professional Development Plan (PDP) and a Skills Matrix. Online templates were adapted to show some of the skills and competences I acquired:

Skills Matrix			
TECHNICAL SKILLS :		**Proficiency**	**Interest**
Concepts and Principles (of information systems, ethical implications, security …)		2	1
Logical & Algorithmic Thinking		2	1
HTML & CSS		2	1
Basic Python Programming		2	1
Object-Oriented Programming with Python		1	1
UML and Diagrams (Activity, state, sequence, ERD…)		2	1
Flask – web development		2	1
SQL		2	1
PROJECT MANAGEMENT SKILLS:			
Communication Skills		3	1
Time Management		3	1
Critical & Analytical Thinking		3	1
Manage a small IT project		2	1
Resilience		3	1
Interpersonal skills & Teamwork		3	1

Key to understand the scale:

Proficiency level :

0 = No capability

1 = Basic level

2 = Intermediate level

3 = Advanced level

Interest :

0 = Has no interest in applying this capability

1 = Is interested in applying this capability

Figure 15: The Skills Matrix gives an idea of the skills and competences acquired or reinforced during this module [template adapted from Wiley (2021)]

After an evaluation of my skills and competences, I have realised that I still need more work in coding/programming with Python/OOP.

Objectives/Goals (What do you want to be able to do or do better?)	Learn how to code professionally and use Python programming in any project
Skills/Qualifications/Experience (What do you have or need to do in order to achieve this objective/goal?	Very little experience in coding. More practical works in Python Programming needed
Gaps identified (What are the gaps between the skills you have and those that you need? Rank your current ability using the following scale**: A:** I demonstrate high levels of competence in this skill. **B:** I have this skill/competency, but some improvements could be made. **C:** I need to improve this skill/competency. **D:** I need to put in considerable work to develop this skill/competency. **E:** I have almost no experience with this competency.)	C
Actions (What methods will you use to achieve the learning objectives? Give a target date (action step, to complete by…)	Enrolled in the PG Cert in Computer Science Use knowledge gained and start working on one digital humanities project which needs to use Python. Do some exercises in Python and OOP Deadline: December 2021
Obstacles and Solutions (List any difficulties that you foresee. Think about how you'll overcome these, and, if necessary, add more goals.)	**Obstacle**: Time: Juggling with professional, personal and student life. **Solution**: Follow a strict work plan, and use python and programming in an ongoing project. This will help to practice the concepts learnt in class
Success criteria (How will you recognise success? How will you review and measure your improvement? What criteria will you use to determine whether you have succeeded, and when and how will you measure this?	Ability to produce coding scripts on a digital humanities project To measure in six months: complete at least one digital humanities project in Python
Implementation (How will you practice and apply what you learn?)	Use Python in most, if not all, of my projects.

Figure 16: The Personal and Professional Development Plan gives more details on the skills I need to improve [Template adapted from MindTools (2007-2014) etc.)

Joining the PG Certificate in Computer Science seems to have been a good decision to further my career in digital humanities. A few more steps must be followed to gain more autonomy and reach my goals:

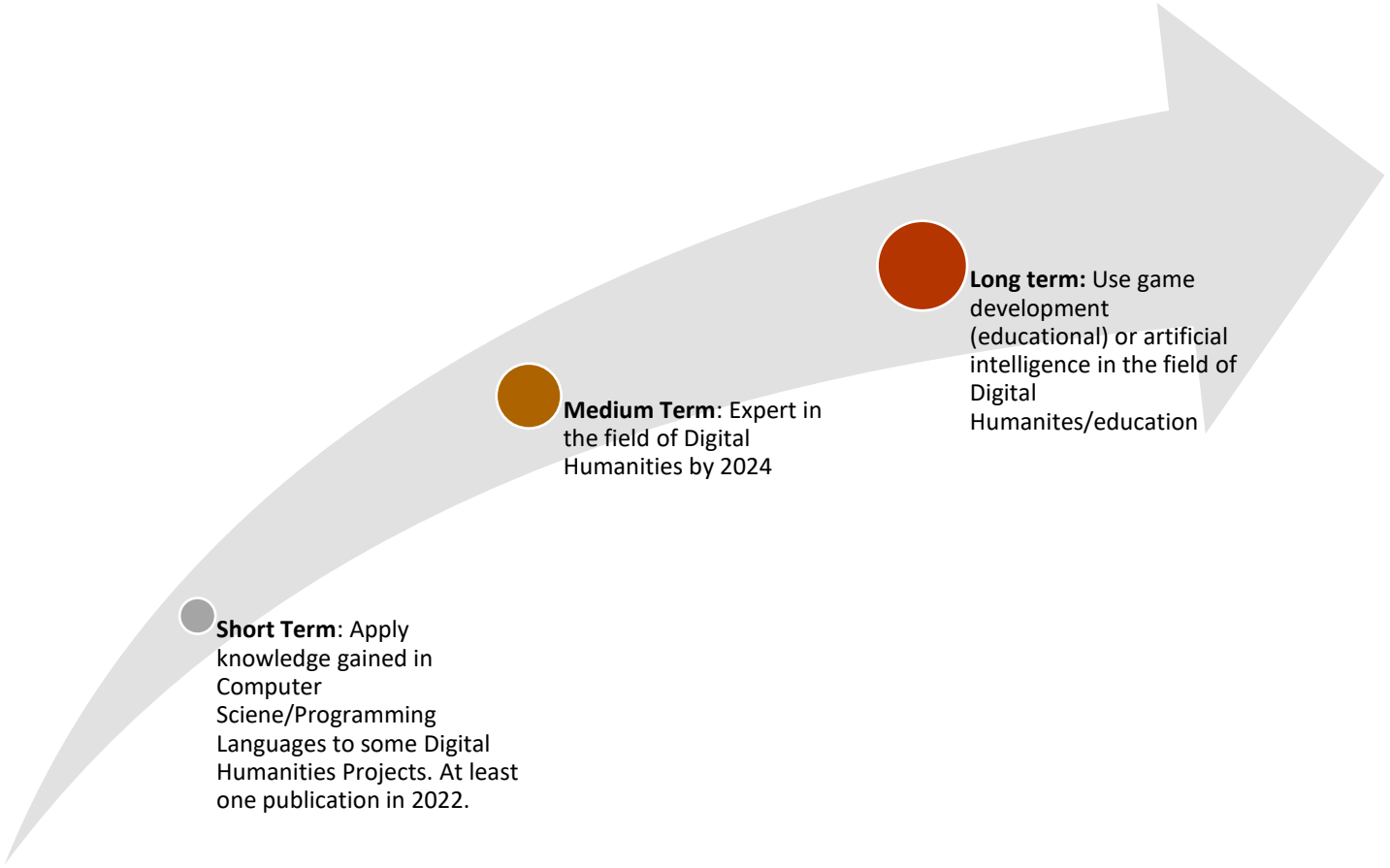


Figure 17: Reflecting upon my career path

4. Conclusion

> “E-Portfolios are a way [for students] to collect, reflect on, and present computing artefacts and their online learning experiences (Lorenzo and Ittelson, 2005).

Working on this e-portfolio and this assignment has made me realise the skills I have gained in the last months. Despite the fact that I need to improve a lot in coding/programming and OOP in Python, at the end of the module I am able to cover most, if not all learning outcomes of the module:

- “Appraise and evaluate critically the concepts and principles of information systems, and understand the implications of emerging technologies on privacy in information systems **[Units 1,2,3,12].**
- Design or modify and document an object-oriented information system using appropriate tools **[Units 4,5,6].**
- Develop an object-oriented information system design, implementing this knowledge in applicable programming languages, such as Python and SQL **[Units 7, 8, 9, 10, 11].**
- Develop, implement and evaluate critically information system solutions to facilitate business decisions **[Unit 12]**" (Buckley, 2021).

This module has also made me gained more confidence in my decision to embark in the digital humanities. One of the last unit’s learning outcomes was “engage with future trends in information systems” (Buckley, 2021). I, therefore, decided to write a final blog post on “information systems and humanities”, accessible in my e-portfolio in Unit 12 of the Module Notes section.

It might seem a paradox to link information systems (IS), object-oriented programming and the humanities as they appear completely separate concepts that have very few aspects in common. However, in the age of big data, can we say that the humanities do not overlap with IS? IS, which “is a historically grown discipline” originates certainly from the field of management (Scheuermann & Kroeze, 2017), but it is important to note the place of “the human perspective” in a computer-based environment and the impact of ICT on individual human experience and on society at large (Scheuermann & Kroeze, 2017). Societal issues are definitely raised in the computing environment and the impact of ICT on society and humanity and in the field of humanities cannot be underrated.

To sum up, as mentioned by Scheuermann & Kroeze (2017), there is “a vast reservoir of resources almost unknown in the information sciences” and by merging the two fields (that is digital humanities and information system), new and interdisciplinary research can be accomplished.

No of words: 2469 (excluding title page, table of contents, references, screenshots…)

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