

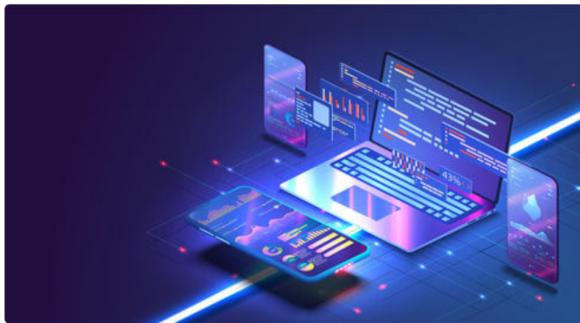
E-portfolio : <https://sharonwong01.github.io/sharonwongportfolio/>



E-portfolio by Sharon Wong

Hi, I'm Sharon Wong

I am currently undertaking the postgraduate diploma of computer science programme. I am an internal auditor and I want to gain some new knowledge and skills in other area so I decided to study this programme. I have learnt a lot of new concepts during the first few modules in this programme.

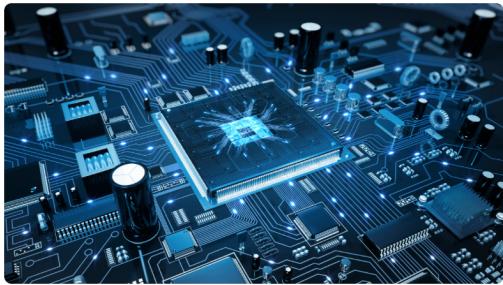


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Modules in this programme



Launching into Computer Science

After the module:

Students will be able to

- Identify and explain the architecture, structure and functionality of basic components of computer system
- Demonstrate a critical understanding of core data structures and programming concepts, including



Object-Oriented Information Systems

After the module:

Students will be able to

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“Modules in this programme

Launching into Computer Science

After the module:

Students will be able to

- Identify and explain the architecture, structure and functionality of basic components of computer system
- Demonstrate a critical understanding of core data structures and programming concepts, including algorithm computability
- Critically evaluate the functionality of different types of software, i.e., operating system, utility programs, languages and applications.
- Critically appraise the emerging trends in the field, such as cloud computing, big data, cyber security, and the professional and ethical requirements for dealing with such contemporary computer-based technologies.

Object-Oriented Information Systems

After the module :

Students will be able to

- Appraise and evaluate critically the concepts and principles of information systems.
- 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.
- Develop, implement and evaluate critically information system solutions to facilitate business decisions.”

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[MORE](#)

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Secure Software Development

After the module:

Students will be able to

- Identify and manage security risks as part of a software development project.
- Critically analyse development problems and determine appropriate methodologies, tools and techniques (including program design and development) to solve them.
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Get in touch

Can contact me by my personal email:

 sharonwong-1201@outlook.com

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☰

Object-Oriented Information Systems - Content for this Module

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- [Unit 3: Fundamentals of Object-Oriented Design](#)
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- [Unit 5: Understanding UML](#)
- [Unit 6: Hands-on with UML](#)
- [Unit 7: Database Design](#)
- [Unit 8: Hands-on with Database Design](#)
- [Unit 9: Implementing Database with SQL](#)
- [Unit 10: Working with SQL](#)
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- [Unit 12: The Future of Information Systems](#)
- [Professional Skills Matrix and action plan \(PDP\)](#)

“Object-Oriented Information Systems - Content for this Module”

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Unit 12 : The Future of Information Systems
Professional Skills Matrix and action plan (PDP)"



E-portfolio by Sharon Wong

Unit 1 - Introduction to Information Systems

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- [Brief Summary of the Content](#)
- [E-portfolio component - Collaboration Discussion](#)
- [Reflection](#)

"Unit 1 - Introduction to Information Systems

[BACK](#)

Learning outcome and required readings

Brief Summary of the Content

E-portfolio component - Collaboration Discussion

Reflection"

<

learningoutcomeunit1.pdf

Save as... ▾

In Unit 1:

Learning outcomes :

Students will learn :

- The prevalence of information systems.
- Their importance to individuals and organisations.
- The problems that can be caused by information systems when not properly designed or developed.
- Explore the Systems Development Lifecycle (SDLC) and its key phases.

After the completion of the unit :

Students will be able to :

- Understand the core elements of an information system
- Appreciate the common issues that can arise when deploying a system
- Gain an understanding of the SDLC, its phases and their importance.

Required reading:

-Sommerville, I. (2016) Software Engineering. Harlow: Pearson
• Chapter 1
-BBC (2015) US Prisoners Released Early by Software Bug. -Barrett, L. (2003) Hospital Revives its Dead Patients

Additional Reading:

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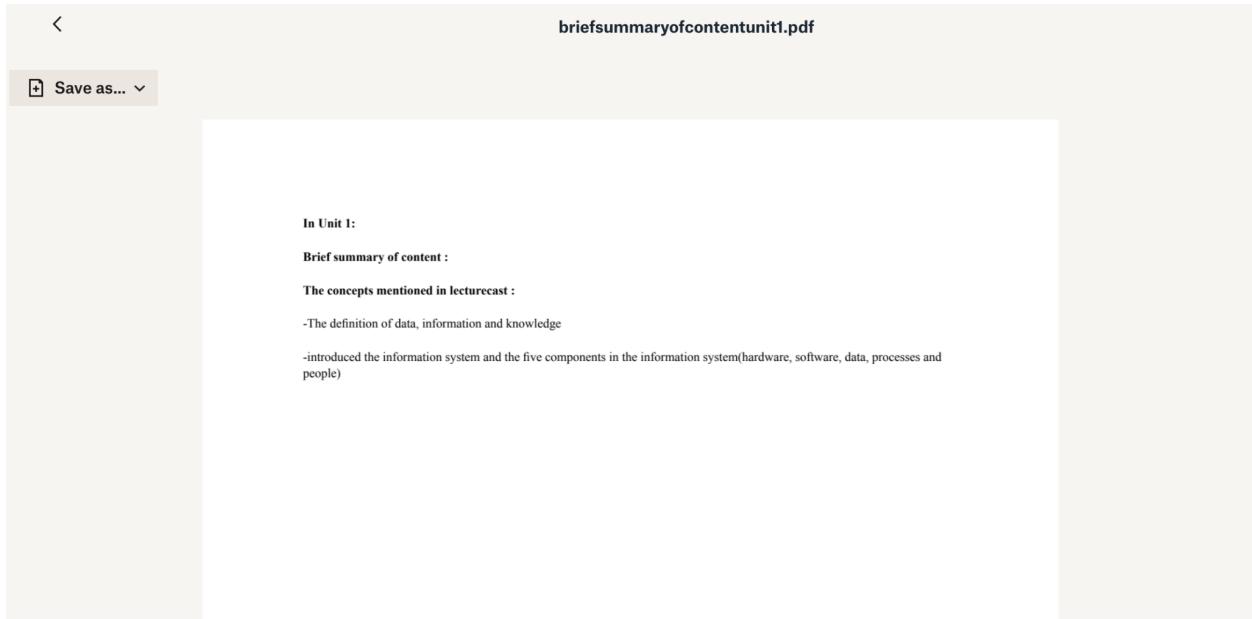
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"In Unit 1:

Brief summary of content :

The concepts mentioned in lecturecast :

-The definition of data, information and knowledge

-introduced the information system and the five components in the information system(hardware, software, data, processes and people)"

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In Unit 1:

E-portfolio component:

Collaboration Discussion:(Wong, 2021)

"The case I chose for collaboration discussion was about the Delta Air Lines and the information system failures. The content of the initial post on the discussion forum has been shown as below :

The case is about the Delta Air Lines and the information system failures happened in August 2016. There was a computer outage at the US group's headquarters in Atlanta prompted the airline to cancel about 2,300 flights, delaying the journeys of hundreds of thousands of passengers and prompting three days of chaos.

The reason for the failure:

- There was a malfunction in an ageing piece of equipment at its data centre had caused a fire that knocked out its primary and back-up systems

The impact of the failure:

- The system failure knocked \$100m off revenues in August.
- The information system failure may affect the reputation of the airline.
- People may lose confidence in this airline and the future revenue may be affected by this incident.
- The stock price of the airline may be affected by this incident as well.
- Wasted time and human output because it requires a lot of people to see how to make the information system works again when there is an information system failure.

< eportfoliouint1.pdf

Save as... ▾

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- Missing or corrupted data may be one of the impacts. If the back-up system of the airline is not sufficient enough then information in the information system may be missing or lost when the information system failure happens.

References :

Ahmed, M. (2017). Five corporate IT failures that caused huge disruption. Available from: <https://www.ft.com/content/270563ee-43b9-11e7-8d27-59b4dd6296b8> [Accessed 31 January 2021].

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The screenshot shows a PDF document titled "reflectionunit1.pdf". At the top left is a back arrow icon. Below it is a "Save as..." button with a dropdown arrow. The main content area contains several sections with headings and text:

- In Unit 1:**
- Reflection :**

I have did some research on the SDLC and I have learnt more concepts on it. In addition, I needed to post an initial post on the discussion forum so I have to search and read different cases about the information system failure. During this process, I learnt how important is the information system in a company and how to maintain the information system in order to avoid the information system failure is another matter which we need to look for.
- The problem I faced in unit 1 :**

I have faced a difficulty in unit 1. The difficulty was that I had to think about the impact of the information system failure of the case which I chose for the initial post because the content of the case did not provide much information about the impact of the information system failure.
- The solution :**

The solution which I used to solve the difficulty is to do more research in order to understand the importance of the information system and seriousness of the information system failure.
- The things that I learnt from the problem :**

After solving the difficulty, I have learnt the importance of the information system and the seriousness of the information system failure. In addition, I have learnt how a company can maintain the information system in order to avoid the information system failure.

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Unit 2 - Information Systems and their Importance

BACK

- [Learning outcome and required readings](#)
- [E-portfolio component - Peer Response](#)
- [Reflection](#)

“Unit 2 - Information Systems and their Importance

BACK

Learning outcome and required readings

E-portfolio component - Peer Response

Reflection”

The screenshot shows a PDF document with the following content:

In Unit 2:
Learning outcome and required reading:

In this unit, students will :

- Focus on the individual elements of an information system.
- Investigate how the elements of an information system fit together.
- Discuss the potential issues that could be encountered by an information system.

On completion of this unit students will be able to :

- Understand the core components of an information system and their importance.
- Evaluate a range of issues and appropriate solutions or mitigations.

Required Reading
Bourgeois, D. (2014) Welcome to Information Systems for Business and Beyond. Saylor Academy.
• Chapter 1: Introduction to Information systems

Additional Reading
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• Chapters 2 - 10

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- Chapters 2 - 10"

eportfoliouit2.pdf

In Unit 2:

E-portfolio component:

Peer responses : (Wong, 2021)

"1st :

YoHay Samson
Hello Man Sze Wong
Thank you for your nice article.
A similar case happened in a large government office. A central system that centralizes the financial statements of various organizations collapsed several days after the financial statements were closed.
The reasons for this:
1. An information system in which versions of the operating system have not been updated for several years.
2. A version update of the database was also not performed
3. Lack of professional knowledge of the parties responsible for the system.
As a result, the government reporting system has been shut down for several days. Preventive maintenance is needed to computers in the same way that it needed to a car, an air condition set and many other electronic tools. Any attempt to reduce cost of preventive maintenance may lead a system failure."

Thoughts on the comment of YoHay Samson :

Thank you YoHay for giving me this comment. After I read his comment, I know more cases about the information system failure and the reason why the information system failure happens. So, it is really important for people to learn how to maintain the information system and avoid having the information system failure.

2nd :

"Jonathan Mason

Hi Man Sze Wong,

This is an interesting case study. It seems like this is not just a case of infrastructure failure, but of poor business continuity and disaster planning. My employer has someone whose job role is to create, and update, plans for any type of incident that may occur. In the event of a disaster, these plans are accessed

and they detail the least disruptive course of action for the business. A failure at one point of their IT Infrastructure should not have caused 3 days worth of chaos."

Thoughts on the comment of Jonathan Mason:

Thank you Jonathan for giving me comment and thank you for sharing his point of view on the case which I have mentioned in my initial post. After that, I know seems it is quite common for a company to experience the information system failure because the employer of Jonathan faced similar situation before.

Reference :

Wong, S.(2021) 'EoMP(OOIS) - WONGMANSZE'. End of Module Assignment submitted to the University of Essex Online for resubmission.

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reflectionunit2.pdf

Save as... ▾

In Unit 2:

Reflection :

In unit 2, I have learnt what En Route Automation Modernization (ERAM) system is. Also, I have some more thoughts about the comments of my peers and I have expressed my thoughts on the comments of my peers on the PDF "E-portfolio component - Peer Response".

At the end of unit 2, I can understand the core components of an information system and their importance and I can evaluate a range of issues and appropriate solutions or mitigations now.

The problem I faced in unit 2 :

I had a difficulty in unit 2 and the difficulty was that I had limited knowledge about the En Route Automation Modernization (ERAM) system.

The solution :

The solution which I used to solve the difficulty is to do more research on En Route Automation Modernization (ERAM) system in order to understand more about En Route Automation Modernization (ERAM) system.

The things that I learnt from the problem :

After solving the difficulty, I learnt what En Route Automation Modernization (ERAM) system is, the implementation of the system and what challenges the system faces. For example, the basic concept of the system, the En Route Automation Modernization (ERAM) system is an automation platform of the Federal Aviation Administration's (FAA) and it has been used to manage the air traffic at 20 en route centers in the US.

Reference :

S. Torres, J. Dehn, E. McKay, M. M. Paglione and B. S. Schnitzer, "En-Route Automation Modernization (ERAM) trajectory model evolution to support trajectory-based operations (TBO)," 2015 IEEE/AIAA 34th Digital Avionics Systems Conference (DASC), 2015, pp. 1A6-1-1A6-15.

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Unit 3 - Fundamentals of Object-Oriented Design

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- [E-portfolio component - Summary Post](#)
- [Reflection](#)

"Unit 3 - Fundamentals of Object-Oriented Design

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[Learning outcome and required readings](#)

[E-portfolio component - Summary Post](#)

[Reflection](#)"

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learningoutcomeunit3.pdf

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In Unit 3:

Learning outcome and required reading:

In this unit students will :

- Learn the core principles and concepts of object-oriented design.
- Discuss the differences between classes and objects.
- Discuss inheritance and composition as methods of design.
- Introduce polymorphism as a concept for object-oriented design.

On completion of this unit students will be able to :

- Identify the appropriate objects within a system.
- Develop an object-oriented design for a system.
- Correctly apply composition and inheritance where appropriate.

Required Reading

Philips, D. (2018) Python 3 Object-Oriented programming. 3rd ed. Packt Publishing

- Chapters 1&5

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In Unit 3:

E-portfolio component: (Wong, 2021)

"Summary for the initial post and peer responses

Information system failure happens in a lot of areas. Not only in the case which has been shared on my initial post but also in the financial statement area and the reasons why the information system failure happens in the financial statement could be the information system in which versions of the operating system have not been updated for several years, a version update of the database was also not performed and lack of professional knowledge of the parties responsible for the system. In addition, the IT failure can also related to poor business continuity and disaster planning.

Summary for the content in this three units

In unit 1, the content of the unit mainly focus on teaching how to developed the ability to appraise and evaluate critically the concepts and principles of information systems and teaching how develop, implement and evaluate critically information systems solutions to facilitate business decisions.

In unit 2, this unit mainly focus on how to identify the individual components of an information systems and how they interact.

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After 3 units of learning in this module, I have the basic concept of the individual component of an information systems and the design of an object-oriented information system.

After posting this activity, I have more concepts and knowledge on the weaknesses which have been identified by OWASP especially on the XSS Cross-site scripting area."

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Save as... ▾

Reference :

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Reference :

Wong, S.(2021) ‘EoMP(OOIS) - WONGMANSZE’. End of Module Assignment submitted to the University of Essex Online for resubmission.”

The screenshot shows a PDF document titled "reflectionunit3.pdf". At the top left is a back arrow icon. Below it is a "Save as..." button with a dropdown arrow. The main content area contains the following text:

In Unit 3 :

Reflection :

I have achieved the target which has been mentioned in the VLE at the beginning of the unit and I learnt how to create a object-oriented design for supermarket through the practical activity. In this activity, I think the most difficult part is for me to think about what classes should be included and which class should be put as the super class and the relationship between each class. After I do some research for how to create an object-oriented design for supermarket, I figured out how to design a diagram for supermarket.

The problem in unit 3 :

There was a difficulty in unit 3 and the difficulty was that I had limited knowledge on the types of relationship in object-oriented programming so it was a bit difficult for me to create an object-oriented design for the supermarket at the very beginning.

The solution :

The solution which I used to solve the problem was to search for more information about the types of relationships in object-oriented programming.

The things that I learnt from the problem :

I have learnt the types of the relationships in object oriented programming and I learnt when to use the types of relationships. Those types of relationships are Inheritance, Composition, Association and Aggregation.

"In Unit 3 :

Reflection :

I have achieved the target which has been mentioned in the VLE at the beginning of the unit and I learnt how to create a object-oriented design for supermarket through the practical activity. In this activity, I think the most difficult part is for me to think about what classes should be included and which class should be put as the super class and the relationship between each class. After I do some research for how to create an object-oriented design for supermarket, I figured out how to design a diagram for supermarket.

The problem in unit 3 :

There was a difficulty in unit 3 and the difficulty was that I had limited knowledge on the types of relationship in object-oriented programming so it was a bit difficult for me to create an object-oriented design for the supermarket at the very beginning.

The solution :

The solution which I used to solve the problem was to search for more information about the types of relationships in object-oriented programming.

The things that I learnt from the problem :

I have learnt the types of the relationships in object oriented programming and I learnt when to use the types of relationships. Those types of relationships are Inheritance, Composition, Association and Aggregation.”



E-portfolio by Sharon Wong

Unit 4 - Object-Oriented Development and Python

[BACK](#)

- [Learning outcome and required readings](#)
- [PDF for reference](#)
- [Reflection](#)

“Unit 4 - Object-Oriented Development and Python

[BACK](#)

[Learning outcome and required readings](#)

[PDF for reference](#)

[Reflection”](#)

In Unit 4:

Learning outcome and required readings:

In this unit students will :

- Explore object-oriented principles and concepts in Python.
- Investigate inheritance, composition and polymorphism in Python.
- Discuss the key challenges involved in developing using an object-oriented approach.
On completion of this unit I will be able to :
 - Design object-oriented models of a system.
 - Develop object-oriented software using the Python programming languages.

Required Reading

Philips, D. (2018) Python 3 Object-Oriented programming. 3rd ed. Packt Publishing.

- Chapters 2&3

Additional Reading

Hall, T. (2009) Python 3 for absolute beginners. New York: Apress.

- Chapter 9

RealPython (n.d.) Object-Oriented Programming with Python

"In Unit 4:

Learning outcome and required readings:

In this unit students will :

- Explore object-oriented principles and concepts in Python.
- Investigate inheritance, composition and polymorphism in Python.
- Discuss the key challenges involved in developing using an object-oriented approach.
On completion of this unit I will be able to :
 - Design object-oriented models of a system.
 - Develop object-oriented software using the Python programming languages.

Required Reading

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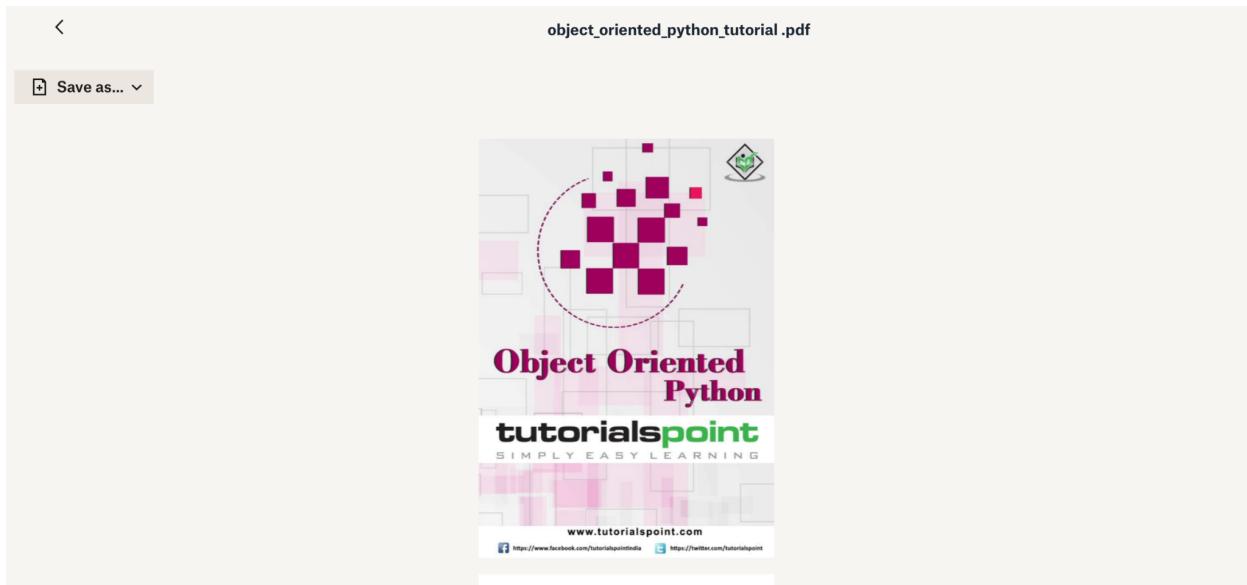
- Chapters 2&3

Additional Reading

Hall, T. (2009) Python 3 for absolute beginners. New York: Apress.

- Chapter 9

RealPython (n.d.) Object-Oriented Programming with Python"



A screenshot of a PDF viewer window titled "reflectionunit4.pdf". The document contains a section titled "In Unit 4:" followed by a "Reflection:" section. The reflection text reads: "During unit 4, I have to keep on updating the my e-portfolio and I did a research on the Object-Oriented Programming with Python. The reference PDF helped me to know more on the object-oriented programming. I have uploaded this on my e-portfolio as well. So, the things that I learnt in unit 4 was mainly focus on how to create an object diagram and the concept of the type of relationships in object-oriented programming."

"In Unit 4:

Reflection:

During unit 4, I have to keep on updating the my e-portfolio and I did a research on the Object-Oriented Programming with Python. The reference PDF helped me to know more on the object-oriented programming. I have uploaded this on my e-portfolio as well. So, the things that I learnt in unit 4 was mainly focus on how to create an object diagram and the concept of the type of relationships in object-oriented programming."



Unit 5 - Understanding UML

BACK

- [Learning outcome and required readings](#)
- [E-portfolio component - Practical activity](#)
- [Reflection](#)

“Unit 5 - Understanding UML

BACK

Learning outcome and required readings

E-portfolio component - Practical activity

Reflection”

The screenshot shows a Microsoft Word document window. At the top left is a back arrow icon. In the top right, the file name 'learningoutcomeunit5.docx.pdf' is displayed. Below the title bar, there is a 'Save as...' button. The main content area contains the following text:

Unit 5:
In this unit students will

- Introduce the core elements of UML.
- Discuss the different interaction diagrams used in UML.
- Learn how to create object-oriented designs using UML.

On completion of this unit students will be able to

- Use UML to develop an object-oriented system design.
- Develop a sequence diagram to model the interactions between objects.
- Identify and use the correct elements of UML to design a system.

Required Reading
Fowler, M. (2013) *UML Distilled: a brief guide to the standard object modeling language*. 3rd ed. Boston, MA: Addison Wesley

- Chapters 3, 4, 10 &11

Ambler, S. (2003) *Elements of UML Style*. Cambridge: Cambridge University Press

- Chapters 1, 2, 3

“Unit 5:

In this unit students will

- Introduce the core elements of UML.
- Discuss the different interaction diagrams used in UML.
- Learn how to create object-oriented designs using UML.

On completion of this unit students will be able to

- Use UML to develop an object-oriented system design.
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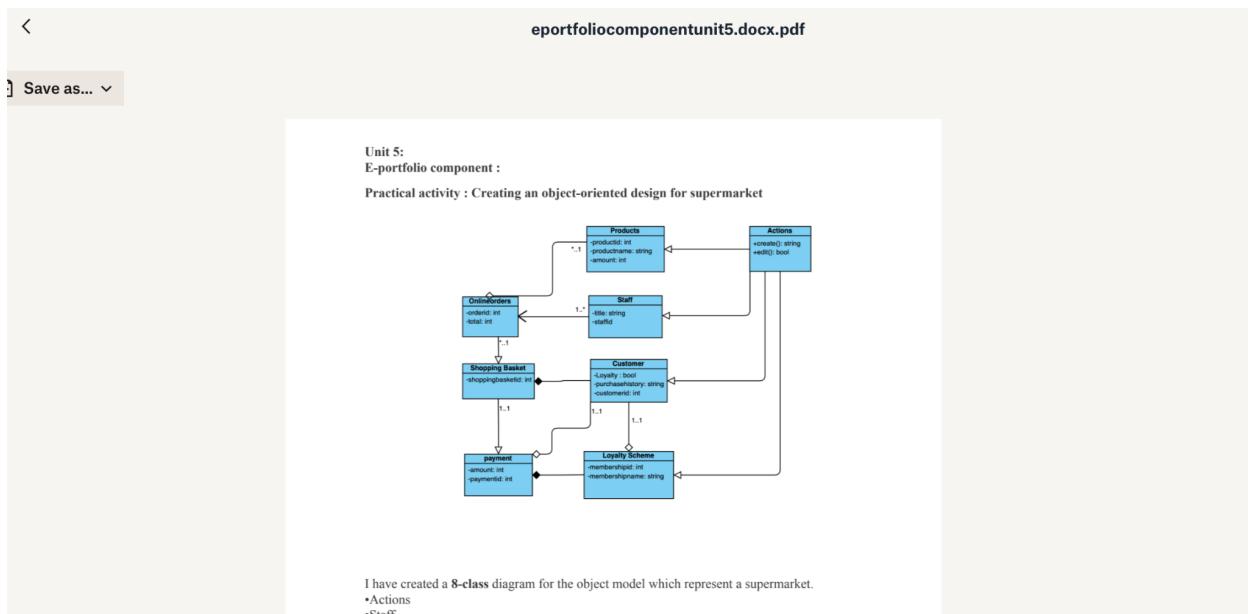
Required Reading

Fowler, M. (2013) *UML Distilled: a brief guide to the standard object modeling language*. 3rd ed. Boston, MA: Addison Wesley

- Chapters 3, 4, 10 &11

Ambler, S. (2003) *Elements of UML Style*. Cambridge: Cambridge University Press

- Chapters 1, 2, 3”



< eportfolio component unit5.docx.pdf

Save as... ▾

I have created a **8-class** diagram for the object model which represent a supermarket.

- Actions
- Staff
- Products
- Customers
- Online orders
- Loyalty Schemes
- Shopping Cart
- Payment

There are 4 types of relationships in the class diagram.

First one is aggregation relationship, online orders- product, payment - customer, loyalty scheme - customer. In the aggregation relationship, the child class is part of the parent class. It means the product is being as a part of the online orders, the customer is a part of the payment because it forms the payment, the customer is a part of the loyalty scheme.

Second one is composition relationship, shopping basket - customer, payment - loyalty scheme. In the composition relationship, the associated class cannot exist independently.

< eportfolio component unit5.docx.pdf

Save as... ▾

Third one is association relationship, online orders - staff. There is a directed association relationship between the class "online orders" and "staff". It means that the online orders are being managed by the staff in the supermarket.

Last one is inheritance relationship, product - action, staff - action, customer - action, loyalty scheme - action, so class action will be a specific type or action inside the class product, customer and loyalty scheme.

"Unit 5:

E-portfolio component :

Practical activity : Creating an object-oriented design for supermarket

I have created a 8-class diagram for the object model which represent a supermarket.

•Actions

- Staff
- Products
- Customers
- Online orders
- Loyalty Schemes
- Shopping Cart
- Payment

There are 4 types of relationships in the class diagram.

First one is aggregation relationship, online orders- product, payment - customer, loyalty scheme - customer. In the aggregation relationship, the child class is part of the parent class. It means the product is being as a part of the online orders, the customer is a part of the payment because it forms the payment, the customer is a part of the loyalty scheme.

Second one is composition relationship, shopping basket - customer, payment - loyalty scheme. In the composition relationship, the associated class cannot exist independently.

Third one is association relationship, online orders - staff. There is a directed association relationship between the class “online orders” and “staff”. It means that the online orders are being managed by the staff in the supermarket.

Last one is inheritance relationship, product - action, staff - action, customer - action, loyalty scheme - action, so class action will be a specific type or action inside the class product, customer and loyalty scheme.”

The screenshot shows a PDF document titled "reflectionunit5.pdf". At the top left is a back arrow icon. Below it is a "Save as..." button with a dropdown arrow. The main content area starts with "Unit 5:" followed by "Reflection:". A detailed reflection follows, mentioning familiarity with object-oriented design and deeper understanding of class diagram creation. It also discusses the difficulty faced at the beginning of the unit and the solution found through research. The final section, "The things that I learnt from the problem:", summarizes the concepts learned about class attributes and relationships.

Unit 5:

Reflection:

I have created an object-oriented class diagram for a supermarket and I am more familiar with the object-oriented design after doing this practical activity. Additionally, I have a deeper understanding on how to create a class diagram and think about what are the key elements to put on the class diagram through doing the practical activity.

The problem in unit 5 :

There was a difficulty which I had faced in unit 5. The difficulty was that I am not familiarised with creating class diagrams so it is a bit difficult for me to complete the practical activity(create an object-oriented class diagram for a supermarket) at the beginning of the unit.

The solution :

The solution which I used to solve the problem was to search for more information and understand what are the attributes of a class diagram and what are the types of the relationship between the class diagrams in order to complete the practical activity successfully in unit 5.

The things that I learnt from the problem :

The things that I learnt in unit 5 was mainly about the concept of the attributes of a class diagram and the types of the relationships between the class diagrams. In addition, I am more familiar with the object-oriented design after completing the practical activity in unit 5.”

“Unit 5:

Reflection:

I have created an object-oriented class diagram for a supermarket and I am more familiar with the object-oriented design after doing this practical activity. Additionally, I have a deeper understanding on how to create a class diagram and think about what are the key elements to put on the class diagram through doing the practical activity.

The problem in unit 5 :

There was a difficulty which I had faced in unit 5. The difficulty was that I am not familiarised with creating class diagrams so it is a bit difficult for me to complete the practical activity(create an object-oriented class diagram for a supermarket) at the beginning of the unit.

The solution :

The solution which I used to solve the problem was to search for more information and understand what are the attributes of a class diagram and what are the types of the relationship between the class diagrams in order to complete the practical activity successfully in unit 5.

The things that I learnt from the problem :

The things that I learnt in unit 5 was mainly about the concept of the attributes of a class diagram and the types of the relationships between the class diagrams. In addition, I am more familiar with the object-oriented design after completing the practical activity in unit 5.”



Unit 6 - Hands-on with UML

BACK

- [Learning outcome and required readings](#)
- [Practical Activity - Class Diagram](#)
- [Practical Activity - Activity Diagram](#)
- [Practical Activity - Sequence Diagram](#)
- [Reflection](#)

“Unit 6 - Hands-on with UML

BACK

Learning outcome and required readings
Practical Activity - Class diagram
Practical Activity - Activity Diagram
Practical Activity - Sequence Diagram
Reflection”

The screenshot shows a PDF document with the following content:

Unit 6:
Learning outcome and required reading:
In this unit students will:

- Investigate the methods for identifying classes within a system.
- Investigate inheritance, composition and polymorphism in Python.
- Discuss the key challenges involved in developing using an object-oriented approach.

On completion of this unit students will be able to

- Identify the potential classes in a system brief.
- Develop a set of UML documentation for a specific scenario.

Required Reading
Ambler, S. (2003) *Elements of UML Style*. Cambridge: Cambridge University Press

- Chapters 4, 6, 8 & 9

Lucidchart (n.d.) UML Class Diagram Tutorial
Banas, D. (2012) UML 2.0 Tutorial

Additional Reading
Bruegge, B. (2014) *Object-oriented software engineering : using UML, patterns, and Java*. Harlow: Pearson

- Chapter 2

“Unit 6

Learning outcome and required reading:

In this unit students will:

- Investigate the methods for identifying classes within a system.

- Investigate inheritance, composition and polymorphism in Python.
- Discuss the key challenges involved in developing using an object-oriented approach.

On completion of this unit students will be able to

- Identify the potential classes in a system brief.
- Develop a set of UML documentation for a specific scenario.

Required Reading

Ambler, S. (2003) *Elements of UML Style*. Cambridge: Cambridge University Press

- Chapters 4, 6, 8 & 9

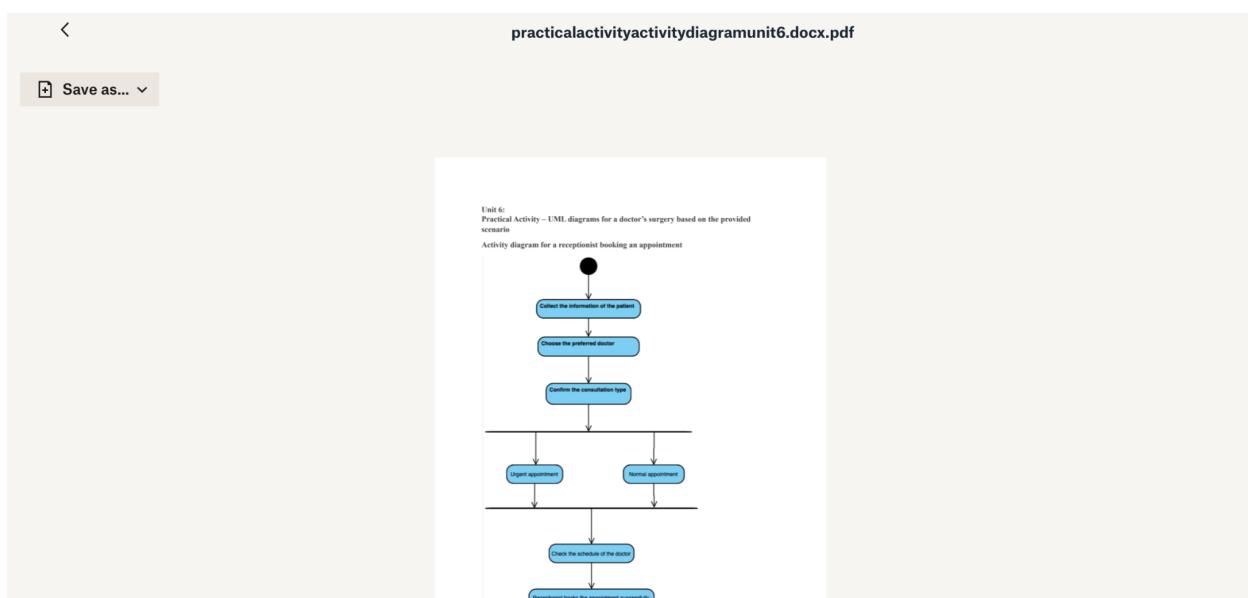
Lucidchart (n.d.) UML Class Diagram Tutorial

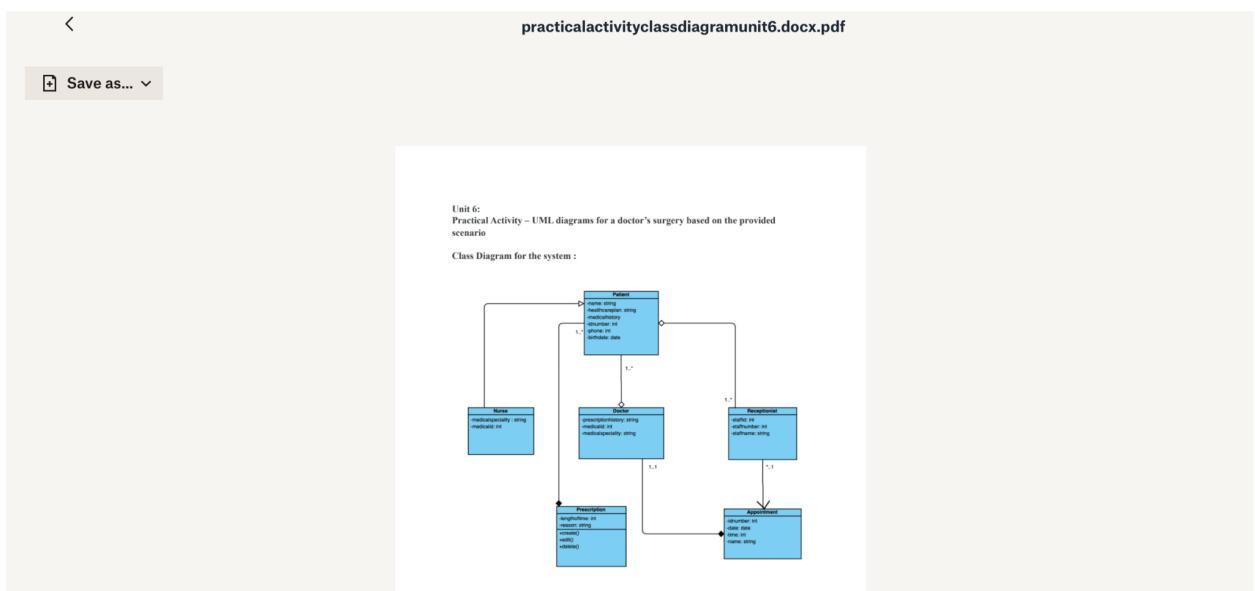
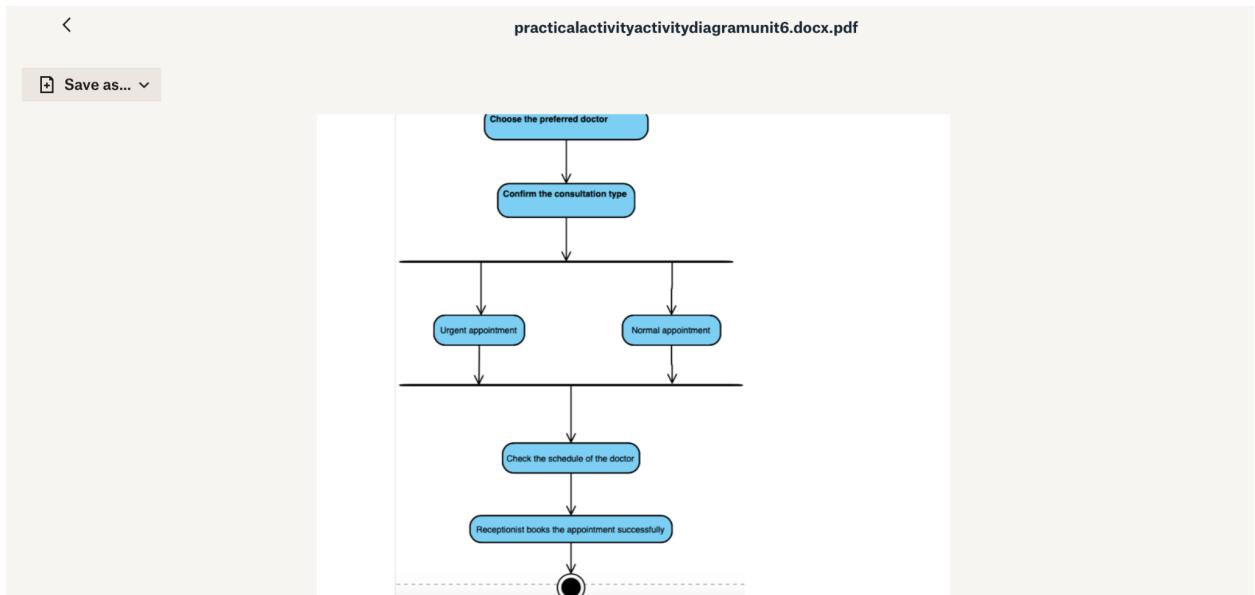
Banas, D. (2012) UML 2.0 Tutorial

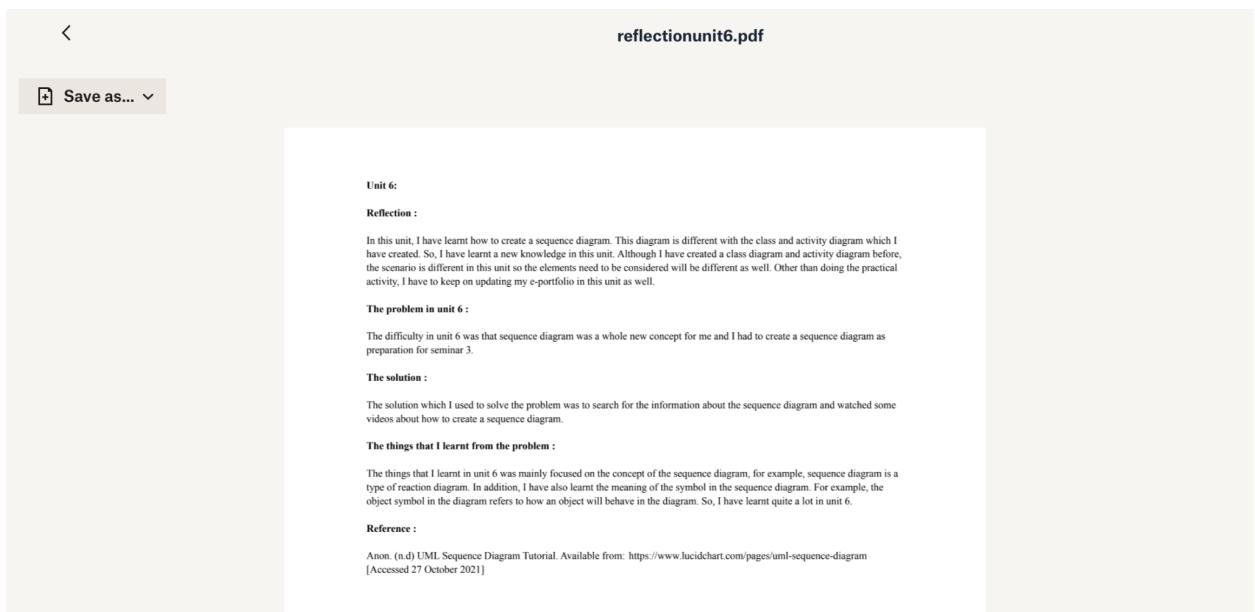
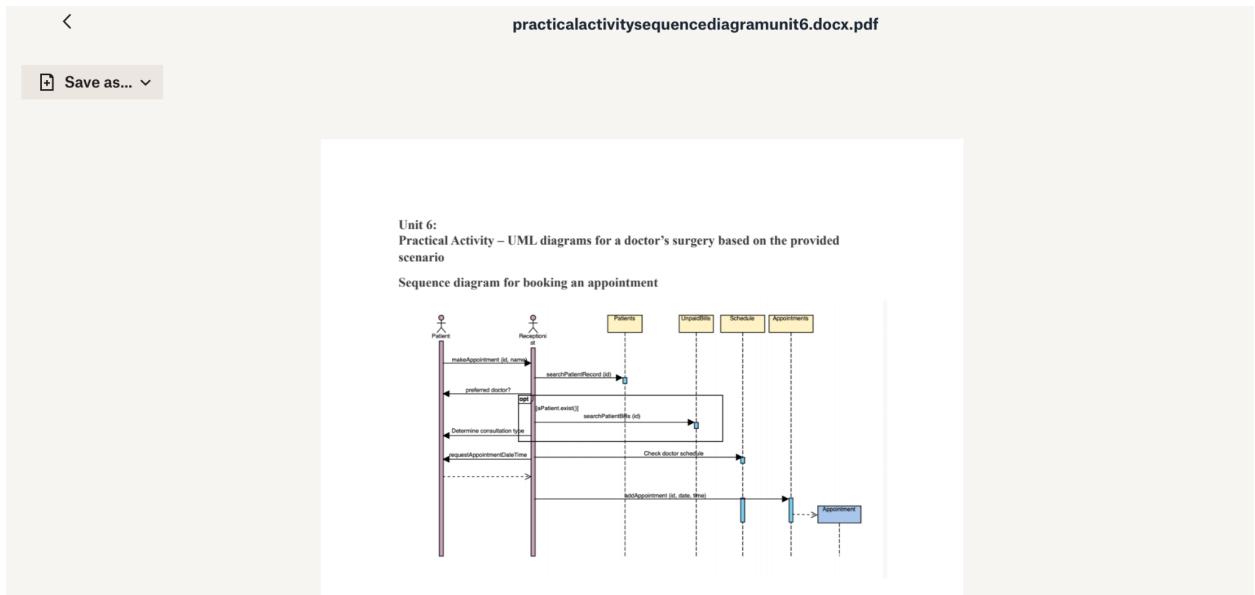
Additional Reading

Bruegge, B. (2014) *Object-oriented software engineering : using UML, patterns, and Java*. Harlow: Pearson

- Chapter 2”







“Unit 6:

Reflection :

In this unit, I have learnt how to create a sequence diagram. This diagram is different with the class and activity diagram which I have created. So, I have learnt a new knowledge in this unit. Although I have created a class diagram and activity diagram before, the scenario is different in this unit so the elements need to be considered will be different as well. Other than doing the practical activity, I have to keep on updating my e-portfolio in this unit as well.

The problem in unit 6 :

The difficulty in unit 6 was that sequence diagram was a whole new concept for me and I had to create a sequence diagram as preparation for seminar 3.

The solution :

The solution which I used to solve the problem was to search for the information about the sequence diagram and watched some videos about how to create a sequence diagram.

The things that I learnt from the problem :

The things that I learnt in unit 6 was mainly focused on the concept of the sequence diagram, for example, sequence diagram is a type of reaction diagram. In addition, I have also learnt the meaning of the symbol in the sequence diagram. For example, the object symbol in the diagram refers to how an object will behave in the diagram. So, I have learnt quite a lot in unit 6.

Reference :

Anon. (n.d) UML Sequence Diagram Tutorial. Available from:
<https://www.lucidchart.com/pages/uml-sequence-diagram> [Accessed 27 October 2021]"



E-portfolio by Sharon Wong

Unit 7 - Database Design

[BACK](#)

- [Learning outcome and required readings](#)
- [Practical Activity - Normalization Diagram](#)
- [Reflection](#)

“Unit 7 - Database Design

BACK

Learning outcome and required readings

Practical Activity - Normalization Diagram

Reflection “

The screenshot shows a Microsoft Word document window with the title bar 'learningoutcomeunit7.docx.pdf'. In the top left corner, there is a back arrow icon and a 'Save as...' button with a dropdown arrow. The main content area is titled 'Unit 7:' and contains the following sections:

- Learning outcome and required readings:**
- In this unit students will**
 - Investigate the core elements of a database.
 - Learn how to design a database to satisfy the third normal form (3NF).
 - Compare and contrast the similarities to object-oriented design.
- On completion of this unit students will be able to**
 - Develop the knowledge and skills to apply database design principles.
 - Design a database that has been correctly normalised .
- Required Reading**

Kroenke, T. & Beg, C. (2015) *Database Systems: A Practical Approach to Design, Implementation, and Management*. Global Edition. Edinburgh: Pearson.

 - Chapters 1, 4 & 14
- Additional Reading**

Kroenke, D. (2015) *Database processing : fundamentals, design, and implementation*. Upper Saddle River: Pearson

 - Chapters 1, 3, and 4

"Unit 7:

Learning outcome and required readings:

In this unit students will

- Investigate the core elements of a database.
- Learn how to design a database to satisfy the third normal form (3NF).
- Compare and contrast the similarities to object-oriented design.

On completion of this unit students will be able to

- Develop the knowledge and skills to apply database design principles.
- Design a database that has been correctly normalised .

Required Reading

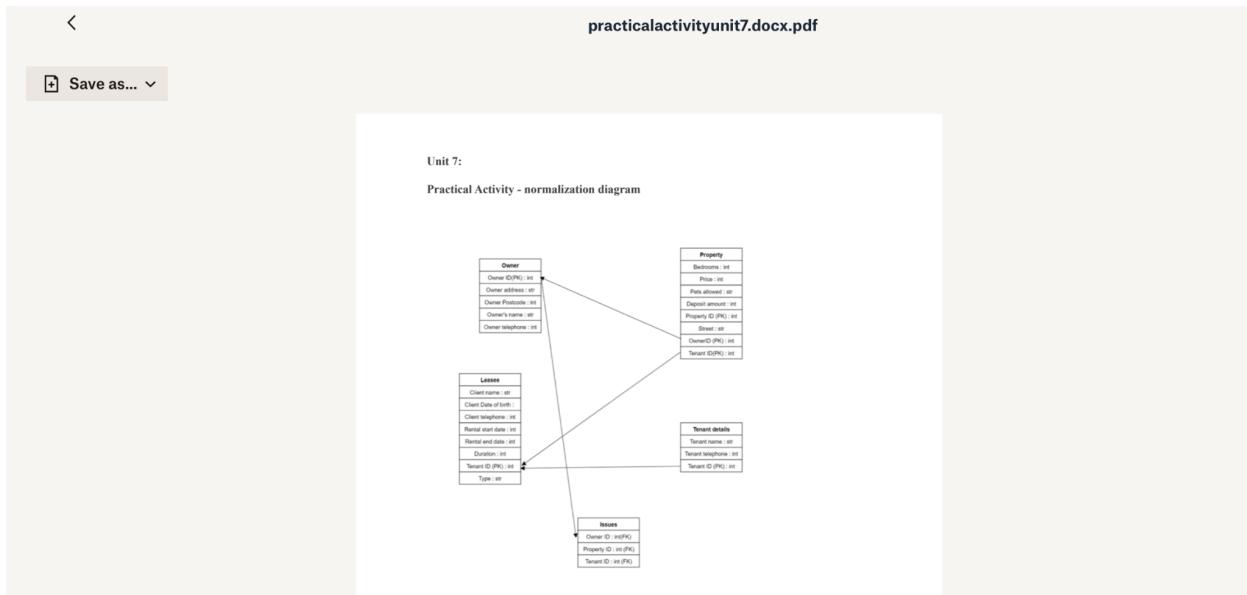
Kroenke, T. & Beg, C. (2015) *Database Systems: A Practical Approach to Design, Implementation, and Management*. Global Edition. Edinburgh: Pearson.

- Chapters 1, 4 & 14

Additional Reading

Kroenke, D. (2015) *Database processing : fundamentals, design, and implementation*. Upper Saddle River: Pearson

- Chapters 1, 3, and 4"



reflectionunit7.pdf

Unit 7:

Reflection:

In this unit, the lecturecast has taught students the concept of database and the concept of normalization(1NF, 2NF and 3NF). Other than that, I had to do a practical activity which is about normalization as well. This activity helps me to have a better understanding on the notes which have been provided together with the lecturecast.

The problem in unit 7 :

In this unit, I had faced a difficulty and the difficulty was that it is a bit hard for me to differentiate 1NF, 2NF and 3NF.

The solution :

The solution which I used to solve the problem is that I did some more research on normalization, 1NF, 2NF and 3NF. Those research helped me to understand the concept of normalization and helped me to have a better understanding of the lecturecast.

The things that I learnt from the problem :

The things that I learnt in unit 7 were mainly focused on the concept of normalization, for example, normalization is actually a process of organizing data in a database. In addition, I have learnt how to differentiate between 1NF, 2NF and 3NF.

“Unit 7:

Reflection:

In this unit, the lecturecast has taught students the concept of database and the concept of normalization(1NF, 2NF and 3NF). Other than that, I had to do a practical activity which is about normalization as well. This activity helps me to have a better understanding on the notes which have been provided together with the lecturecast.

The problem in unit 7 :

In this unit, I had faced a difficulty and the difficulty was that it is a bit hard for me to differentiate 1NF, 2NF and 3NF.

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The solution which I used to solve the problem is that I did some more research on normalization, 1NF, 2NF and 3NF. Those research helped me to understand the concept of normalization and helped me to have a better understanding of the lecturecast.

The things that I learnt from the problem :

The things that I learnt in unit 7 were mainly focused on the concept of normalization, for example, normalization is actually a process of organizing data in a database. In addition, I have learnt how to differentiate between 1NF, 2NF and 3NF.”



E-portfolio by Sharon Wong

Unit 8 - Hands-on with Database Design

[BACK](#)

- [Learning outcome and required readings](#)
- [E-portfolio component - Collaboration Discussion 2](#)
- [Reflection](#)

“Unit 8 - Hands-on with Database Design

BACK

Learning outcome and required readings

E-portfolio component - Collaboration Discussion 2

Reflection”

< learningoutcomeunit8.docx.pdf

Save as... ▾

Unit 8:
In this unit students will

- Discuss the key considerations when determining tables and columns.
- Investigate the key elements of an entity relationship diagram (ERD).

On completion of this unit you will be able to:

- Develop a structure for a database for a given scenario.
- Create an entity relationship diagram to document your design.

Required Reading

Connolly, T. & Beg, C. (2015) *Database Systems: A Practical Approach to Design, Implementation, and Management*. Global Edition. Edinburgh: Pearson

- Chapters 12, 13

Lucidchart (2017) What is an Entity Relationship Diagram?

Additional Reading

Kroenke, D. (2015) *Database processing : fundamentals, design, and implementation*. Upper Saddle River: Pearson

- Chapter 5

Creately (2020) Ultimate Entity Relationship Diagram Tutorial

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In this unit students will

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Required Reading

Connolly, T. & Beg, C. (2015) *Database Systems: A Practical Approach to Design, Implementation, and Management*. Global Edition. Edinburgh: Pearson

- Chapters 12, 13

Lucidchart (2017) What is an Entity Relationship Diagram?

Additional Reading

Kroenke, D. (2015) *Database processing : fundamentals, design, and implementation*. Upper Saddle River: Pearson

- Chapter 5

Creately (2020) Ultimate Entity Relationship Diagram Tutorial”



eportfoliouit8.pdf

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In Unit 8:

Collaboration discussion 2 :

Initial Post : (Wong, 2021)

Discussion Topic : NoSQL Technology

“NoSQL and NoSQL graph database”

What is NoSQL and NoSQL database?

NoSQL actually means not only SQL.

NoSQL databases store data in different way which is not the same as the relational tables. The type of NoSQL databases varies from its data model. The main types of NoSQL Database are document, key-value, wide-column and graph. These types of databases provide flexible schemas and scale easily with large amounts of data and high user loads.

The Graph database would be further discussed in this post. For Graph databases, the NoSQL graph database is a technology for data management which is designed to handle large sets of structured (standardized format), semi-structured (a form of structured data that does not obey the tabular) or unstructured data (information that either does not have a pre-defined data model or is not organized in a pre-defined manner).

NoSQL Graph Database Vs. Relational Database

The traditional relational database was designed to store the structured data and information and the NoSQL Graph database was designed to store and handle a large amount of data and information.

Nowadays, the data and information from mobile, social and Internet of Things (IoT) is everywhere and those data and information normally are unstructured real-time data so the NoSQL graph database can

NoSQL Graph Database Vs. Relational Database

The traditional relational database was designed to store the structured data and information and the NoSQL Graph database was designed to store and handle a large amount of data and information.

Nowadays, the data and information from mobile, social and Internet of Things (IoT) is everywhere and those data and information normally are unstructured real-time data so the NoSQL graph database can handle those data without performing the step of schema re-defined and the NoSQL graph database does not need its schema re-defined before adding any new data. This function of NoSQL makes the database more flexible and the cost will be lower when the database needs to integrate with new data sources.

When comparing the NoSQL graph database with the traditional relational database. The traditional relational database is only able to handle and analyze the data in one or a few locations and the NoSQL is more able to store, integrate, retrieve and analyze the data from many locations.

The advantages of the NoSQL graph database

There are several advantages of using NoSQL graph database. First one is the database can store unstructured, semi-structured and structured data. Now, NoSQL databases have become more and more popular because people can store the data and information in the databases in various ways and this makes the data and information become closer to the way which has been used by the applications. In addition, the transformation of the data would fewer when the data is stored or retrieved for use.

Second one is the NoSQL database enable easy updates to schemas and fields. NoSQL database stores data in a simple and straightforward forms and this can make the data become easier to understand than the type of data models used in SQL databases.

Other than those advantages, NoSQL database is that the database is a developer-friendly database. This is because NoSQL databases allow developers to directly change the structure of the data. In addition, users of NoSQL find it easier to create various types of applications.

In conclusion, the NoSQL database is developer-friendly and easier to use. The function of traditional relational database is limited and can normally store the structured data and information only.

Reference :

Anon. (n.d) What is NoSQL Graph Database? Available from :
<https://www.ontotext.com/knowledgehub/fundamentals/nosql-graph-database/> [Accessed 26 July 2021]

Anon. (n.d) What is NoSQL Graph Database? Available from :
<https://www.ontotext.com/knowledgehub/fundamentals/nosql-graph-database/> [Accessed 26 July 2021]

Anon. (n.d) Advantages of NoSQL Databases. Available from :
<https://www.mongodb.com/nosql-explained/advantages> [Accessed 26 July 2021]"

Wong, S (2021) 'EoMP(OOIS) - WONGMANSZE'. End of Module Assignment submitted to the University of Essex Online for resubmission.

"In Unit 8:

Collaboration discussion 2 :

Initial Post : (Wong, 2021)

Discussion Topic : NoSQL Technology

NoSQL and NoSQL graph database

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NoSQL databases store data in different way which is not the same as the relational tables. The type of the NoSQL databases varies from its data model. The main types of NoSQL Database are document, key-value, wide-column and graph. These types of databases provide flexible schemas and scale easily with large amounts of data and high user loads.

The Graph database would be further discussed in this post. For Graph databases, the NoSQL graph database is a technology for data management which is designed to handle large sets of structured (standardized format), semi-structured (a form of structured data that does not obey the tabular) or unstructured data (information that either does not have a pre-defined data model or is not organized in a pre-defined manner).

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The traditional relational database was designed to store the structured data and information and the NoSQL Graph database was designed to store and handle a large amount of data and information.

Nowadays, the data and information from mobile, social and Internet of Things (IoT) is everywhere and those data and information normally are unstructured real-time data so the NoSQL graph database can handle those data without performing the step of schema re-defined and the NoSQL graph database does not need its schema re-defined before adding any new data. This function of NoSQL makes the database more flexible and the cost will be lower when the database needs to integrate with new data sources.

When comparing the NoSQL graph database with the traditional relational database. The traditional relational database is only able to handle and analyze the data in one or a few locations and the NoSQL is more able to store, integrate, retrieve and analyze the data from many locations.

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There are several advantages of using NoSQL graph database. First one is the database can store unstructured, semi-structured and structured data. Now, NoSQL databases have become more and more popular because people can store the data and information in the databases in various ways and this makes the data and information become closer to the way which has been used by the applications. In addition, the transformation of the data would fewer when the data is stored or retrieved for use.

Second one is the NoSQL database enable easy updates to schemas and fields. NoSQL database stores data in a simple and straightforward forms and this can make the data become easier to understand than the type of data models used in SQL databases.

Other than those advantages, NoSQL database is that the database is a developer-friendly database. This is because NoSQL databases allow developers to directly change the structure of the data. In addition, users of NoSQL find it easier to create various types of applications.

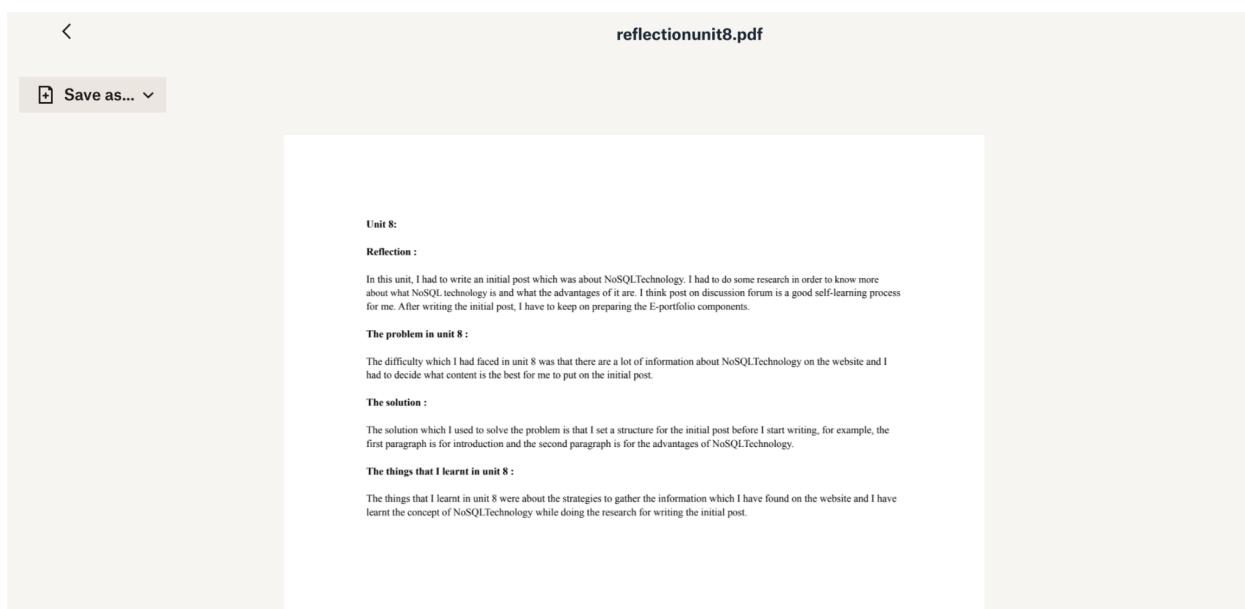
In conclusion, the NoSQL database is developer-friendly and easier to use. The function of traditional relational database is limited and can normally store the structured data and information only.

Reference :

Anon. (n.d) What is NoSQL Graph Database? Available from :
<https://www.ontotext.com/knowledgehub/fundamentals/nosql-graph-database/> [Accessed 26 July 2021]

Anon. (n.d) Advantages of NoSQL Databases. Available from :
<https://www.mongodb.com/nosql-explained/advantages> [Accessed 26 July 2021]

Wong, S.(2021) ‘EoMP(OOIS) - WONGMANSZE’. End of Module Assignment submitted to the University of Essex Online for resubmission.”



The screenshot shows a PDF document titled "reflectionunit8.pdf". The document contains a reflection on NoSQL technology, structured into sections: "Unit 8:", "Reflection:", "The problem in unit 8:", "The solution:", and "The things that I learnt in unit 8:". The "Reflection:" section includes a paragraph about the initial post and research process. The "The problem in unit 8:" section discusses difficulty in deciding content. The "The solution:" section notes setting a structure before writing. The "The things that I learnt in unit 8:" section mentions strategies for gathering information and learning about NoSQL concepts.

Unit 8:

Reflection :

In this unit, I had to write an initial post which was about NoSQLTechnology. I had to do some research in order to know more about what NoSQL technology is and what the advantages of it are. I think post on discussion forum is a good self-learning process for me. After writing the initial post, I have to keep on preparing the E-portfolio components.

The problem in unit 8 :

The difficulty which I had faced in unit 8 was that there are a lot of information about NoSQLTechnology on the website and I had to decide what content is the best for me to put on the initial post.

The solution :

The solution which I used to solve the problem is that I set a structure for the initial post before I start writing, for example, the first paragraph is for introduction and the second paragraph is for the advantages of NoSQLTechnology.

The things that I learnt in unit 8 :

The things that I learnt in unit 8 were about the strategies to gather the information which I have found on the website and I have learnt the concept of NoSQLTechnology while doing the research for writing the initial post.

“Unit 8:
Reflection :

In this unit, I had to write an initial post which was about NoSQLTechnology. I had to do some research in order to know more about what NoSQL technology is and what the advantages of it are. I think post on discussion forum is a good self-learning process for me. After writing the initial post, I have to keep on preparing the E-portfolio components.

The problem in unit 8 :

The difficulty which I had faced in unit 8 was that there are a lot of information about NoSQLTechnology on the website and I had to decide what content is the best for me to put on the initial post.

The solution :

The solution which I used to solve the problem is that I set a structure for the initial post before I start writing, for example, the first paragraph is for introduction and the second paragraph is for the advantages of NoSQLTechnology.

The things that I learnt in unit 8 :

The things that I learnt in unit 8 were about the strategies to gather the information which I have found on the website and I have learnt the concept of NoSQLTechnology while doing the research for writing the initial post.”



Unit 9 - Implementing Database with SQL

[BACK](#)

- [Learning outcome and required readings](#)
- [Brief Summary of the Content](#)
- [Reflection](#)

“Unit 9 - Implementing Database with SQL

[BACK](#)

[Learning outcome and required readings](#)

[Brief Summary of the Content](#)

[Reflection”](#)

The screenshot shows a PDF document titled "learningoutcomeunit9.docx.pdf". At the top left is a back arrow, and at the top right is the file name. Below the title is a "Save as..." button. The main content area starts with "Unit 9:" and "In this unit students will". It lists three bullet points: "Revisit the core concepts of SQL.", "Discuss the different types of queries and their uses.", and "Investigate the methods of managing a database.". Following this is a section titled "On completion of this unit students will be able to" with three bullet points: "Implement a database design using SQL.", "Create appropriate queries using SQL.", and "Understand the access and security issues around SQL.". Below this is a "Required Reading" section with several references, and an "Additional Reading" section with more references. At the bottom of the page is a navigation bar with icons for search, previous, next, and other document functions.

"Unit 9:

In this unit students will

- Revisit the core concepts of SQL.
- Discuss the different types of queries and their uses.
- Investigate the methods of managing a database.

On completion of this unit students will be able to

- Implement a database design using SQL.
- Create appropriate queries using SQL.
- Understand the access and security issues around SQL.

Required Reading

Han J., Haihong E., Guan L. & Jian D. (2011) 'Survey on NoSQL database'. 2011 6th International Conference on Pervasive Computing and Applications. Port Elizabeth, South Africa, 26-28 October. IEEE. 363-366. doi: 10.1109/ICPCA.2011.6106531.

MySQL Training (2020) MySQL 8.0 Reference Manual

Additional Reading

Sharma, V. & Dave, M. (2012) SQL and NoSQL Databases. *International Journal of Advanced Research in Computer Science and Software Engineering* 2(8): 20-27.

IBM Big Data & Analytics Hub (2018) The Four V's of Big Data

Be a Better Dev (2020) SQL vs NoSQL Explained

Stajano, F. (1998) *A gentle introduction to relational and object oriented databases*. ORL Technical Report."

< summaryofcontentunit9.docx.pdf

Save as... ▾

Unit 9:
Summary Content for unit 9:
Lecturecast in unit 9:
The lecturecast in unit 9 is about the Implementing database with SQL In addition, the additional readings for students can let me more about the SQL and NoSQL which have been learnt in the last unit (unit 8).
Since I did not get any comments from peers so I could not prepare a section on my E-portfolio for the peer response.

"Unit 9:

Summary Content for unit 9:

Lecturecast in unit 9:

The lecturecast in unit 9 is about the Implementing database with SQL In addition, the additional readings for students can let me more about the SQL and NoSQL which have been learnt in the last unit (unit 8).

Since I did not get any comments from peers so I could not prepare a section on my E-portfolio for the peer response."

< reflectionunit9.pdf

Save as... ▾

In Unit 9:
Reflection:
In this unit, mainly is to prepare the E-portfolio. Through the learning materials which have been provided for the lecturecast in unit 9, I have learnt what are the basic navigation commands within the database, how to add a primary key and how to add a foreign key. Other than these concepts and knowledge, the learning materials also provided some examples to us. I think the example can help me to have a better understanding of the concepts which have been taught under a specific scenario.
The problem in unit 9 :
The problem which I faced in unit 9 was that I had limited knowledge on the navigation commands within a database. Although there is a lecturecast on the virtual learning platform, I still need some more additional information and materials in order to help me to have a better understanding on the concept of navigation commands and how to use the commands within a database.
The solution :
The solution which I used to solve the problem is to search for more information about the navigation commands within a database, read more examples and watch some tutorial videos on websites.
The things that I learnt from the problem :
The things that I learnt from the problem were mainly focused on the concept of the navigation commands within the database and I have learnt the methods for adding a primary key and foreign key within a database.

“In Unit 9:

Reflection:

In this unit, mainly is to prepare the E-portfolio. Through the learning materials which have been provided for the lecturecast in unit 9, I have learnt what are the basic navigation commands within the database, how to add a primary key and how to add a foreign key. Other than these concepts and knowledge, the learning materials also provided some examples to us. I think the example can help me to have a better understanding of the concepts which have been taught under a specific scenario.

The problem in unit 9 :

The problem which I faced in unit 9 was that I had limited knowledge on the navigation commands within a database. Although there is a lecturecast on the virtual learning platform, I still need some more additional information and materials in order to help me to have a better understanding on the concept of navigation commands and how to use the commands within a database.

The solution :

The solution which I used to solve the problem is to search for more information about the navigation commands within a database, read more examples and watch some tutorial videos on websites.

The things that I learnt from the problem :

The things that I learnt from the problem were mainly focused on the concept of the navigation commands within the database and I have learnt the methods for adding a primary key and foreign key within a database.”



E-portfolio by Sharon Wong

Unit 10 - Working with SQL

[BACK](#)

- [Learning outcome and required readings](#)
- [Codio Activity - Introduction to MySQL](#)
- [Collaboration Discussion 2 - Summary Post](#)
- [Reflection](#)

“Unit 10 - Working with SQL

BACK

Learning outcome and required readings

Codio Activity - Introduction to MySQL

Collaboration Discussion 2 - Summary Post

Reflection”

The screenshot shows a PDF document with the following content:

In Unit 10:

In this unit students will

- Implement a database design.
- Understand how to design appropriate queries.

On completion of this unit students will be able to

- Implement a table structure based on a specification.
- Perform simple queries in order to extract information.
- Develop queries requiring multiple tables using either subqueries or joins.

Required Reading

Connolly, T. & Beg, C. (2015) *Database Systems: A Practical Approach to Design, Implementation, and Management*. Global Edition. Edinburgh: Pearson

- Chapters 6, 7 & 8

“In Unit 10:

In this unit students will

- Implement a database design.
- Understand how to design appropriate queries.

On completion of this unit students will be able to

- Implement a table structure based on a specification.
- Perform simple queries in order to extract information.
- Develop queries requiring multiple tables using either subqueries or joins.

Required Reading

Connolly, T. & Beg, C. (2015) *Database Systems: A Practical Approach to Design, Implementation, and Management*. Global Edition. Edinburgh: Pearson

- Chapters 6, 7 & 8”

The screenshot shows a Microsoft Word document with the title "Summarypostunit10.docx.pdf". At the top left is a back arrow icon. Below it is a "Save as..." button with a dropdown arrow. The main content area contains the following text:

In Unit 10:

Collaboration Discussion 2 :

Summary Post :

For the initial post which I have posted on discussion forum in unit 8. I still waiting for the first peer response but I still can write a summary post for what I have learnt in unit 8 -10 and for the initial post.

Brief summary for what I have learnt in unit 8 -10 :

In unit 8, I have learnt to Investigate the key elements of an entity relationship diagram and I have learnt the concept of NoSQL technology through preparing the initial post.

In unit 9, I have a deeper understanding on the NoSQL technology after reading the additional reading for students. In addition, I learnt how to investigate the methods of managing a database.

In unit 10, I have learnt to implement a database design and understand how to design appropriate queries. In addition, I have more understanding after completing the activity on Codio platform.

Summary for initial post in unit 8:

Although I am still waiting for the first peer response, I can tell that I have a thorough understanding on the concept of NoSQL and I know its advantages and disadvantages while doing research for this concept."

"In Unit 10:

Collaboration Discussion 2 :

Summary Post :

For the initial post which I have posted on discussion forum in unit 8. I still waiting for the first peer response but I still can write a summary post for what I have learnt in unit 8 -10 and for the initial post.

Brief summary for what I have learnt in unit 8 -10 :

In unit 8, I have learnt to Investigate the key elements of an entity relationship diagram and I have learnt the concept of NoSQL technology through preparing the initial post.

In unit 9, I have a deeper understanding on the NoSQL technology after reading the additional reading for students. In addition, I learnt how to investigate the methods of managing a database.

In unit 10, I have learnt to implement a database design and understand how to design appropriate queries. In addition, I have more understanding after completing the activity on Codio platform.

Summary for initial post in unit 8:

Although I am still waiting for the first peer response, I can tell that I have a thorough understanding on the concept of NoSQL and I know its advantages and disadvantages while doing research for this concept."

"In Unit 10:

The screenshot shows a Codio workspace interface. At the top, there's a toolbar with a back arrow and a save button labeled "Save as...". The main area contains a document with the following content:

In Unit 10:

Codio activity :

I have completed the codio activity on the codio platform and I have extracted the code from the activity and which has been shown as below:

Codio Activity - Intorduction to MySQL

Intorduction to MySQL

In this codio workspace, the codio has shown students some codes to create the data manipulation commands and those codes have been shown as below :

1) SELECT * FROM db_name.table_name;

2) INSERT INTO table_name (column1,column2,column3,...)
VALUES (value1,value2,value3,...);

3) UPDATE table_name
SET column1=value1,column2=value2,...
WHERE some_column=some_value;

4) DELETE FROM table_name
WHERE some_column=some_value;"

Codio activity :

I have completed the codio activity on the codio platform and I have extracted the code from the activity and which has been shown as below:

Codio Activity - Intorduction to MySQL

Intorduction to MySQL

In this codio workspace, the codio has shown students some codes to create the data manipulation commands and those codes have been shown as below :

1) SELECT * FROM db_name.table_name;

2) INSERT INTO table_name (column1,column2,column3,...)
VALUES (value1,value2,value3,...);

3) UPDATE table_name
SET column1=value1,column2=value2,...
WHERE some_column=some_value;

4) DELETE FROM table_name
WHERE some_column=some_value;"

The screenshot shows a PDF document titled "reflectionunit10.pdf". At the top left is a back arrow icon. Below it is a "Save as..." button with a dropdown arrow. The main content area contains the following text:

In Unit 10:

Reflection:

I have learnt how to implement the database design while completing the codio activity and while preparing the e-portfolio component. However, I think I still need to spend more time on reading the required reading for this unit so that I can have a better understanding on the knowledge which have been taught in this unit.

The problem in unit 10 :

The problem which I faced in unit 10 was that the implementation of database design is a whole new concept for me and I had to complete a codio activity in unit 10.

The solution :

The solution which I used to solve the problem was that I had to read the required reading materials and to watch some videos about how to implement a database design.

The things that I learnt from the problem :

The things that I learnt from the problem were mainly about the concept of implementing database design and I have learnt the strategy for doing the self-learning in a more sufficient way.

"In Unit 10:

Reflection:

I have learnt how to implement the database design while completing the codio activity and while preparing the e-portfolio component. However, I think I still need to spend more time on reading the required reading for this unit so that I can have a better understanding on the knowledge which have been taught in this unit.

The problem in unit 10 :

The problem which I faced in unit 10 was that the implementation of database design is a whole new concept for me and I had to complete a codio activity in unit 10.

The solution :

The solution which I used to solve the problem was that I had to read the required reading materials and to watch some videos about how to implement a database design.

The things that I learnt from the problem :

The things that I learnt from the problem were mainly about the concept of implementing database design and I have learnt the strategy for doing the self-learning in a more sufficient way."



Unit 11 - Web Development in Python

[BACK](#)

- [Learning outcome and required readings](#)
- [Codio Activity - Introduction to Flask](#)
- [Brief summary of content](#)
- [Reflection](#)

“Unit 11 - Web Development in Python

BACK

Learning outcome and required readings

Codio Activity - Introduction to Flask

Brief summary of content

Reflection”

The screenshot shows a Microsoft Word document with the following content:

In Unit 11:
In this unit students will

- Introduce the concept of a Model-View-Controller.
- Discuss the key elements of a web application.
- Discuss some of the security considerations of a web development.

On completion of this unit students will be able to

- Implement a simple web server.
- Create dynamic templates using Jinja.
- Connect a database to a Flask application.
- Understand some of the security considerations around web applications.

Required Reading
Ginberg, M. (2017) The Flask Mega Tutorial
Palmer Projects (2010) Flask Tutorial

Additional Reading
RealPython (n.d.) Flask Tutorials

“In Unit 11:

In this unit students will

- Introduce the concept of a Model-View-Controller.
- Discuss the key elements of a web application.
- Discuss some of the security considerations of a web development.

On completion of this unit students will be able to

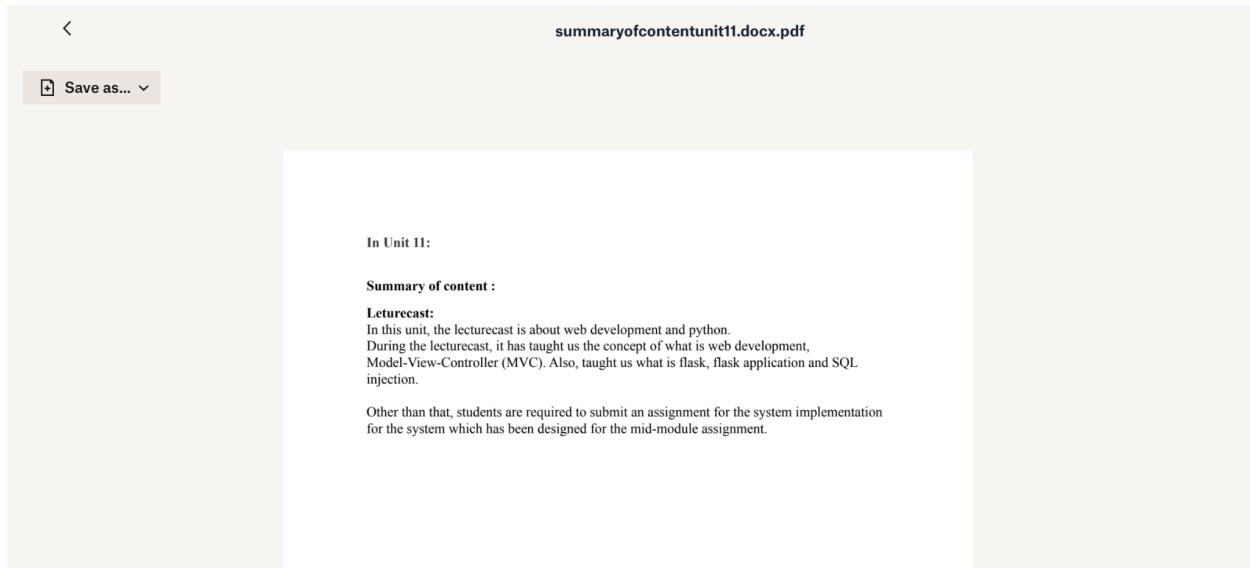
- Implement a simple web server.
- Create dynamic templates using Jinja.
- Connect a database to a Flask application.
- Understand some of the security considerations around web applications.

Required Reading

Ginberg, M. (2017) The Flask Mega Tutorial
 Pallets Projects (2010) Flask Tutorial

Additional Reading

RealPython (n.d.) Flask Tutorials”



The screenshot shows a Microsoft Word document window. At the top, there is a toolbar with various icons. Below the toolbar, the file name 'summaryofcontentunit11.docx.pdf' is displayed. In the center of the window, the document content is visible. The content starts with a section titled 'In Unit 11:' followed by a bolded section 'Summary of content :'. Underneath, there is a bolded section 'Lecturecast:' with a detailed description of the unit's content. The text explains that the lecturecast is about web development and Python, teaching concepts like MVC, Flask, and SQL injection. It also mentions that students are required to submit an assignment for system implementation.

“In Unit 11:

Summary of content :

Lecturecast:

In this unit, the lecturecast is about web development and python.

During the lecturecast, it has taught us the concept of what is web development, Model-View-Controller (MVC). Also, taught us what is flask, flask application and SQL injection.

Other than that, students are required to submit an assignment for the system implementation for the system which has been designed for the mid-module assignment. “

In Unit 11:

Codio Activity:
Codio Activity - Introduction to Flask

```
In this codio activity, some codes for students to set up a server and create a database have been provided. Those codes have been shown as below:  
setting up a server:  
from flask import Flask  
app = Flask(__name__)  
@app.route("/")  
@app.route("/index")  
def index():  
    return "Hello, World!"  
if __name__ == '__main__':  
    app.run(host="0.0.0.0")  
Create a database:  
-- MySQL dump 10.13 Distrib 5.7.31, for Linux (x86_64)  
-- Host: localhost Database: students  
-----  
-- Server version 5.7.31-0ubuntu0.18.04.1  
/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;  
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;  
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;  
/*!40101 SET NAMES utf8 */;  
/*!40101 SET @OLD_TIME_ZONE=@@TIME_ZONE */;  
/*!40101 SET TIME_ZONE=-00:00 */;  
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS */;  
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS */;  
/*!40014 SET @OLD_SQL_MODE=@@SQL_MODE */;  
/*!40101 SET @OLD_SQL_NOTES=@@SQL_NOTES */;  
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES_SQL_NOTES=0 */;
```

Codio Activity - Introduction to MySQL

```
FOREIGN KEY CHECKS=0 */;  
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE */;  
SQL_MODE=NO_AUTO_VALUE_ON_ZERO */;  
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES_SQL_NOTES=0 */;  
--  
-- Table structure for table `grades`  
--  
DROP TABLE IF EXISTS `grades`;  
/*!40101 SET @saved_cs_client = @@character_set_client */;  
/*!40101 SET character_set_client = utf8 */;  
CREATE TABLE `grades` (  
'surname' varchar(30) DEFAULT NULL,  
'forename' varchar(30) DEFAULT NULL,  
  
'module_code' varchar(8) DEFAULT NULL,  
'score' int(1) DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;  
/*!40101 SET character_set_client = @saved_cs_client */;  
-- Dumping data for table `grades`  
--  
LOCK TABLES `grades` WRITE;  
/*!40000 ALTER TABLE `grades` DISABLE KEYS */;  
INSERT INTO `grades` VALUES  
(Smith,'John','MATH101',85),('Jones','Dave','COMP101',93),('Bob','Alice','MATH101',50),('Alice','Bob','MATH101',66);  
/*!40000 ALTER TABLE `grades` ENABLE KEYS */;  
UNLOCK TABLES;  
/*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;  
/*!40101 SET SQL_MODE=@OLD_SQL_MODE */;  
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;  
/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
```

The screenshot shows a Microsoft Word document window with a light gray background. At the top left is a back arrow icon. In the top right corner, the file name 'codioactivityunit1.docx.pdf' is displayed. Below the title bar, there is a 'Save as...' button with a downward arrow. The main content area contains a large block of MySQL SQL code. The code includes various statements such as 'CREATE TABLE', 'ALTER TABLE', 'INSERT INTO', and 'LOCK TABLES'. It also contains numerous comments starting with '/*!40101 SET ... */'. The code is intended to create a database structure and populate it with sample data.

```
score int(11) DEFAULT NULL;
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table 'grades'
LOCK TABLES `grades` WRITE;
/*!40000 ALTER TABLE `grades` DISABLE KEYS */;
INSERT INTO `grades` VALUES
('Smith','John','MATH101',85),('Jones','Dave','COMP101',93),('Bob','Alice','MATH101',50),
('Alice','Bob','MATH101',66);
/*!40000 ALTER TABLE `grades` ENABLE KEYS */;
UNLOCK TABLES;
/*!40101 SET time_zone=@OLD_TIME_ZONE */;
/*!40101 SET sql_mode=@OLD_SQL_MODE */;
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*!40101 SET SQL_NOTES=@OLD_SQL_NOTES */;
```

"In Unit 11:

Codio Activity:

Codio Activity - Introduction to Flask

In this codio activity, some codes for students to set up a server and create a database have been provided. Those codes have been shown as below:

setting up a server :

```
"from flask import Flask
app = Flask(__name__)
@app.route('/')
@app.route('/index')
def index():
    return "Hello, World!"
if __name__ == '__main__':
    app.run(host='0.0.0.0')"
```

Create a database :

```
-- MySQL dump 10.13 Distrib 5.7.31, for Linux (x86_64)
```

```
--
```

```
-- Host: localhost Database: students
```

```
--
```

```
-- Server version 5.7.31-0ubuntu0.18.04.1
/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
```

```

/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS,
FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE,
SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;

-- Table structure for table `grades` 

DROP TABLE IF EXISTS `grades`;
/*!40101 SET @saved_cs_client = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `grades` (
`surname` varchar(30) DEFAULT NULL,
`forename` varchar(30) DEFAULT NULL,
`module_code` varchar(8) DEFAULT NULL,
`score` int(11) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
/*!40101 SET character_set_client = @saved_cs_client */;

-- Dumping data for table `grades` 

LOCK TABLES `grades` WRITE;
/*!40000 ALTER TABLE `grades` DISABLE KEYS */;
INSERT INTO `grades` VALUES
('Smith','John','MATH101',85),('Jones','Dave','COMP101',93),('Bob','Alice','MATH101',50),('Alice','Bob','MATH101',66);
/*!40000 ALTER TABLE `grades` ENABLE KEYS */;
UNLOCK TABLES;
/*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;
/*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;"
```

The screenshot shows a PDF document titled "reflectionunit11.pdf". At the top left is a back arrow icon. Below it is a "Save as..." button with a dropdown arrow. The main content area contains the following text:

In Unit 11:

Reflection :

There are a lot to learn in this unit and I had do some researches on the concept of web development and flask by my own. I start to learn how to build a website using Flask in this unit. Hope I can have a website which established by myself using Flask soon. In addition, I am trying to learn django as well. During this unit, I have learnt a lot of skills and knowledge. I think I have to practice more inorder to be more familiarise with the skills and knowledge which I have learnt

The problem in unit 11 :

The difficulty that I had faced in unit 11 was that I had to watch a lot of videos on websites in order to learn the new concept and skills of using Flask.

The solution :

The solution that I used to solve the problem was to select some videos on websites and watch those selected videos and which are about using Flask to build a website and then summarize the content on the videos by my own and then figure out the best method to follow.

The things that I learnt from the problem :

The things that I learnt from the problem were mainly focused on how to build a website using Flask and the strategy to summarize the content that I have watched.

"In Unit 11:

Reflection :

There are a lot to learn in this unit and I had do some researches on the concept of web development and flask by my own. I start to learn how to build a website using Flask in this unit. Hope I can have a website which established by myself using Flask soon. In addition, I am trying to learn django as well. During this unit, I have learnt a lot of skills and knowledge. I think I have to practice more inorder to be more familiarise with the skills and knowledge which I have learnt

The problem in unit 11 :

The difficulty that I had faced in unit 11 was that I had to watch a lot of videos on websites in order to learn the new concept and skills of using Flask.

The solution :

The solution that I used to solve the problem was to select some videos on websites and watch those selected videos and which are about using Flask to build a website and then summarize the content on the videos by my own and then figure out the best method to follow.

The things that I learnt from the problem :

The things that I learnt from the problem were mainly focused on how to build a website using Flask and the strategy to summarize the content that I have watched."



Unit 12 - The Future of Information Systems

[BACK](#)

- [Learning outcome and required readings](#)
- [Blog Post](#)
- [Reflection](#)

“Unit 12 - The Future of Information Systems

[BACK](#)

Learning outcome and required readings

Blog Post

Reflection”

The screenshot shows a Microsoft Word document window. At the top left is a back arrow and at the top right is the file name 'learningoutcomeunit12.docx.pdf'. Below the title bar is a 'Save as...' button. The main content area contains the following text:

In Unit 12:

Learning outcome and required readings :

In this unit students will

- Consider the importance of securing information systems.
- Explore the privacy concerns associated with modern information systems.
- Discuss the emerging technologies in information systems.

On completion of this unit students will be able to

- Understand the implications of emerging technologies on privacy in information systems.
- Engage with future trends in information systems.

Required Reading

Valacich, J., & Schneider, C. (2014) *Information Systems Today: Managing in the Digital World*. 6th ed. Boston, MA: Pearson

- Chapters 1 and 10

Bourgeois, D. (2014) *Welcome to Information Systems for Business and Beyond*. Saylor Academy

- Chapters 11 - 13

Jablonski, J. & Robak, S. (2019) Information Systems Development and Usage with Consideration of Privacy and Cyber Security Issues. In: Andusha, M., Maciaszek, I., & Paprecki, M. (Eds.) Proceedings of the 2019 Federated Conference on Computer Science and Information Systems ACSIS, 18: 547-554. doi: 10.15439/2019F261.

Brooks, N., Greer, T. & Morris, S. (2018) Information systems security job advertisement analysis: Skills review and implications for information systems curriculum. *Journal of Education for Business* 93(5): 213-221. doi: 10.1080/08833232.2018.1446893.

“In Unit 12:

Learning outcome and required readings :

In this unit students will

- Consider the importance of securing information systems.
- Explore the privacy concerns associated with modern information systems.

- Discuss the emerging technologies in information systems.

On completion of this unit students will be able to

- Understand the implications of emerging technologies on privacy in information systems.
- Engage with future trends in information systems.

Required Reading

Valacich, J. & Schneider, C. (2014) *Information Systems Today: Managing in the Digital World*. 6th ed. Boston, MA: Pearson

- Chapters 1 and 10

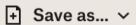
Bourgeois, D. (2014) *Welcome to Information Systems for Business and Beyond*. Saylor Academy.

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Jablonski, J. & Robak, S. (2019) 'Information Systems Development and Usage with Consideration of Privacy and Cyber Security Aspects', in: Ganzha, M., Maciaszek, L. & Paprzycki, M. (eds) Proceedings of the 2019 Federated Conference on Computer Science and Information Systems ACSIS. 18: 547–554. doi: 10.15439/2019F261.

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IN UNIT 12:

Blog Post: (Wong, 2021)

"Emerging Trends in Information Technology"

21st century has been defined by application of and advancement in information technology. Information technology has become an integral part of our daily life.

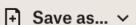
There are several emerging digital trends which have impacts on the information technology.

First one is about the automation, artificial Intelligence and machine learning. Those are part of most advanced emerging technologies which has impact on the information technology. Automation is a simulation of human intelligence tasks through machines and computer systems. For artificial intelligence, this technology has created an AI-powered systems possess the machine ability to think and learn. After the system is well developed, the system can be utilized to optimize the tasks, streamline efficiency, and can minimize the error. For machine learning, machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy.

Second one is about the advanced coding language. Actually, this is an essential emerging trend in the information technology field. It allows organizations to configure the high-quality websites, software and mobile applications.

Third one is about the big data analytics. Analytics for big data is able to examine a large capacities of data in a company or in an organization and big data analytics help an organization to reduce cost and to improve decision making. Also, analytics help an organization to develop a new or better product and can help an organization to enter in a new market. Other than that, smart home technology is one of the

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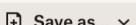
help an organization to enter in a new market. Other than that, smart home technology is one of the emerging trends. It allows the users to monitor and control their home devices through some applications and alternate networked devices. For example, remotely control connected home systems like lights and entertainment devices. Last one is about the cloud computing. Nowadays, more and more organizations are utilizing cloud technology to organize the digital information that they get. The cloud computing technology increases the collaboration efficiency of an organization and helps the organization to reduce the IT cost.

References :

Anon. (n.d) Emerging Trends in Information Technology. Available from :
<https://www.managementstudyguide.com/emerging-trends-in-information-technology.htm> [Accessed 26 July 2021]

Goodison, D. (2020) 10 Future Cloud Computing Trends To Watch In 2021. Available from :
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The screenshot shows a PDF document titled "reflectionunit12.pdf". At the top left is a back arrow, at the top center is the file name, and at the top right is a "Open Sidebar" button. Below the title is a "Save as..." button. The main content area contains the following text:

In Unit 12:

Reflection :

After finished the blog post in unit 12, I know more about the Emerging Trends in Information Technology. Also, I have caught up all the knowledge which I have learnt in this module while preparing the E-portfolio. I have learnt different concepts about the information system, database and UML diagram through unit 12 and the whole module. I will spend more time on doing further research on the concepts and knowledge which I am not familiar with.

The problem in unit 12 :

The difficulty in unit 12 was about selecting suitable materials for the blog post.

The solution :

The solution for me to solve this problem is to use the strategy which I learnt in the previous units in order to select the most suitable materials for me to write the blog post..

The things that I learnt from the problem :

The things that I learnt from the problem were about selecting and summarizing the information which I have read in a better way. Other than that, I have learnt what are the Emerging Trends in Information Technology while preparing the blog post.

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Object-Oriented Information Systems - Content for this Module

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- [Unit 3: Fundamentals of Object-Oriented Design](#)
- [Unit 4: Object-Oriented Development and Python](#)
- [Unit 5: Understanding UML](#)
- [Unit 6: Hands-on with UML](#)
- [Unit 7: Database Design](#)
- [Unit 8: Hands-on with Database Design](#)
- [Unit 9: Implementing Database with SQL](#)
- [Unit 10: Working with SQL](#)
- [Unit 11: Web Development in Python](#)
- [Unit 12: The Future of Information Systems](#)
- [Professional Skills Matrix and action plan \(PDP\)](#)

“Object-Oriented Information Systems - Content for this Module”

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Unit 12 : The Future of Information Systems

Professional Skills Matrix and action plan (PDP)"

Professional Skills Matrix and Action Plan.pdf

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Professional Skills Matrix and Action Plan – Sharon Wong

 Goals : 1. Strong academic achievements in my postgraduate diploma in computer science
2. Become a website developer and can develop my own application

 Key Skills : 1. Programming Language : Python
2. Databases: MySQL, SQLite
3. Web Framework: Flask

 Actions : 1. Deep learning how to create a website and application
2. Have more research on the area which I am interested in
3. Take different courses on the different online learning platform (E.g edX and coursera)
4. Read more books on the computer science field in order to have a better understanding on the latest trend in the web and application development areas.

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