

(Assignment)

<https://micjustus.github.io/essex-eport2/>

e-Portfolio Submission

- Take **screenshots** of your e-portfolio pages for this module and save them in a suitable file (Word, pdf, etc), using a landscape format.
- Ensure that the screenshots are large enough for the reader to see the content.
- Add the corresponding text from each page directly underneath the screenshot (**as shown in the example e-portfolio submission file**). This should be the original text, not another screenshot.
- Include the web page address of your e-portfolio in the document, placed as the header or title of the document.
- Submit the file (titled as the module name) to the submission portal below.

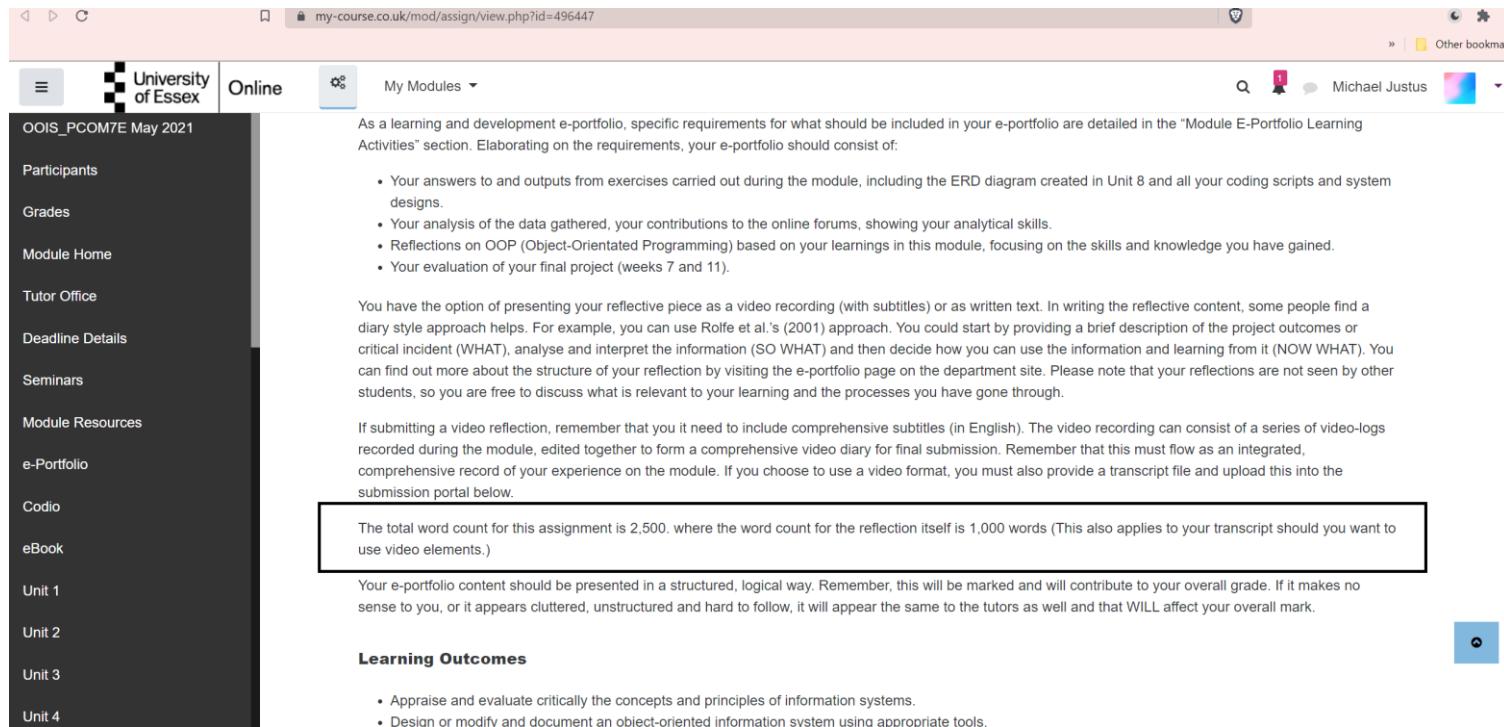
PLEASE NOTE: VERY IMPORTANT! Much of the content of the e-portfolio is housed inside several **PDF** documents which span several pages (over 100 pages of reflective writing for this module's units, exercises, models and project considerations). The content understandably, cannot reside within HTML pages.

I believe the requirement “Add the corresponding text from each page directly” requires further elaboration in the following areas:

- *Is corresponding text from any and all PDF documents to be replicated into this document?*
- *Is the requirement perhaps to rather take screenshots of each PDF page and embed into this document?*

- Does “corresponding text” include text from HTML elements such as buttons, labels, menu items, list item (bullet points)?
- Is text from documents such as the Kaplan Skills Matrix or Personal Development Plan referenced by the e-portfolio to be copied into this document?
- If the requirement is to replicate each page of an e-portfolio’s PDF content, what then is the purpose of hosting the e-portfolio in GitHub?

I am mindful of the word count limit for this submission which is specified as:



The screenshot shows a Moodle assignment view page. The left sidebar lists module resources: Participants, Grades, Module Home, Tutor Office, Deadline Details, Seminars, Module Resources, e-Portfolio, Codio, eBook, Unit 1, Unit 2, Unit 3, and Unit 4. The main content area has a heading "OOIS_PCOM7E May 2021". It contains several sections of text and bullet points. A callout box highlights the word count requirement.

As a learning and development e-portfolio, specific requirements for what should be included in your e-portfolio are detailed in the "Module E-Portfolio Learning Activities" section. Elaborating on the requirements, your e-portfolio should consist of:

- Your answers to and outputs from exercises carried out during the module, including the ERD diagram created in Unit 8 and all your coding scripts and system designs.
- Your analysis of the data gathered, your contributions to the online forums, showing your analytical skills.
- Reflections on OOP (Object-Oriented Programming) based on your learnings in this module, focusing on the skills and knowledge you have gained.
- Your evaluation of your final project (weeks 7 and 11).

You have the option of presenting your reflective piece as a video recording (with subtitles) or as written text. In writing the reflective content, some people find a diary style approach helps. For example, you can use Rolfe et al.'s (2001) approach. You could start by providing a brief description of the project outcomes or critical incident (WHAT), analyse and interpret the information (SO WHAT) and then decide how you can use the information and learning from it (NOW WHAT). You can find out more about the structure of your reflection by visiting the e-portfolio page on the department site. Please note that your reflections are not seen by other students, so you are free to discuss what is relevant to your learning and the processes you have gone through.

If submitting a video reflection, remember that you it need to include comprehensive subtitles (in English). The video recording can consist of a series of video-logs recorded during the module, edited together to form a comprehensive video diary for final submission. Remember that this must flow as an integrated, comprehensive record of your experience on the module. If you choose to use a video format, you must also provide a transcript file and upload this into the submission portal below.

The total word count for this assignment is 2,500. where the word count for the reflection itself is 1,000 words (This also applies to your transcript should you want to use video elements.)

Your e-portfolio content should be presented in a structured, logical way. Remember, this will be marked and will contribute to your overall grade. If it makes no sense to you, or it appears cluttered, unstructured and hard to follow, it will appear the same to the tutors as well and that WILL affect your overall mark.

Learning Outcomes

- Appraise and evaluate critically the concepts and principles of information systems.
- Design or modify and document an object-oriented information system using appropriate tools.

(1000 for module reflection and 1500 for project evaluation). The module reflection and system implementation (PDF content) links provided on the e-portfolio fall within the allotted range, however since the e-portfolio contains no reflective writing content in HTML pages, this limit is underwhelming based solely on HTML content.

Assumptions

Therefore, in light of uncertainty (and remaining time constraints), I make the following assumptions:

1. The e-portfolio will be referenced on GitHub to more fully comprehend writings generated for this module.
2. Module reflections and system implementation reflections will be accessed from the e-portfolio via GitHub link provided.
3. Only the first page of each PDF is provided as a screenshot, based on (1) above.
4. The e-portfolio screenshots contain *navigation items*, and the assumption is to NOT replicate navigation item text since navigation text is very self-explanatory.

<https://micjustus.github.io/essex-eport2/>

Michael Justus

MSc Computer Science

Essex University (Online)

PGCert Computer Science

✓
Launching into Computer Science

Computer Science topics.

⚡
Object-Orientated Information Systems

Object-oriented concepts, UML and Python programming.

Secure Software Development

PGDip Computer Science

Network and Security Information Management

Software Engineering Project Management

Research Methods and Professional Practice

The screenshot shows a web browser window with the title "Object-oriented Information System" and the URL "https://micjustus.github.io/essex-eport2/modules/m02-oois.html". The page features a header with a home icon and the name "Michael Justus". Below the header, there is a section titled "Object-oriented Information Systems" containing a bulleted list of learning objectives. Further down, there is a section titled "Module Documents" with several links to various assignment documents.

Object-oriented Information Systems

- 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.

Module Documents

[OOIS Reflection](#) [Project Reflection](#) [Unit Reflections](#)

[Action Plan](#) [Skills Matrix](#) [Assignment: System Design](#)

[Assignment: System Implementation](#) [Assignment: System Implementation \(ZIP\)](#)

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Object-oriented Information System X +

https://mijustus.github.io/essex-eport2/modules/m02-oois.html 90% ☆ » ▾

- 1. Introduction to Information Systems
- 2. Information Systems and their Importance
- 3. Fundamentals of Object-oriented Design
- 4. Object-oriented Development using Python
- 5. Introduction to Unified Modelling Language (UML)
- 6. Hands-on with UML
- 7. Database Design
- 8. Hands-on with Database Design
- 9. Implementing Databases with SQL
- 10. Working with SQL
- 11. Web Development in Python
- 12. The Future of Information Systems

NO CONTENT SELECTED



Please select a unit to display its content here.

Oh! This empty space sure is lonely.
Blank, nothing, nada. Now, if only these unfulfilled pixels had reason to blink with life...

Hint! The answers you seek to all your questions lie just to the left.

The screenshot shows a web browser window with the title "Object-oriented Information System X". The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content includes a home icon, the name "Michael Justus", a section titled "Object-oriented Information Systems" with a bulleted list of tasks, a "Module Documents" section with several links, and a navigation bar at the bottom.

Michael Justus

Object-oriented Information Systems

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1. Introduction to

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2_OOIS.pdf". The address bar shows the URL: https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2_OOIS.pdf. The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, there are three main sections: "Object-Orientated Information Systems", "Module Reflection", and "Building an E-Portfolio". Under "Building an E-Portfolio", there is a paragraph about the challenges of building an e-portfolio and a concluding statement about enjoying the process.

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Object-Orientated Information Systems

Module Reflection

Building an E-Portfolio

The first hurdle I encountered was building an e-portfolio. The process was arduous and filled with resistance: I hold that an e-portfolio brings no. But I understand it is a requirement of Higher Education and other institutions (Jenson & Treuer, 2014) to show a form of learning.

Regardless, I thoroughly enjoyed *building* the e-portfolio since I gained further experience in

Object-oriented Information System X +

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 Michael Justus

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Object-Orientated Information Systems

Project Reflection

Unit 7: Design

Module 2 dealt with introducing students to building and documenting an information system. Unit 7 focused on delivering UML class, activity and state diagrams using the knowledge gained in prior units. Since I have experience developing UML diagrams, I considered it relatively simple to achieve the outcome. However, I was (painfully) surprised to realise that this was not so. The process I took was first to identify the nouns and verbs of the use case scenario presented. From there, I then extracted each statement that referenced a noun or a

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1. Introduction to

Object-oriented Information System X +

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Michael Justus

Reflective writing for units in Object-oriented Information Systems

Unit 1 - Introduction to Information Systems	Unit 2 - Information Systems and their Importance
Unit 3 - Fundamentals of Object-oriented Design	Unit 4 - Object-oriented Development using Python
Unit 5 - Introduction to Unified Modelling Language (UML)	Unit 6 - Hands-on with UML
Unit 7 - Database Design	Unit 8 - Hands-on with Database Design

1. Introduction to

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[Assignment: System Implementation](#) [Assignment: System Implementation \(ZIP\)](#)

1. Introduction to

Object-oriented Information System X M2_Action_Plan.pdf +

University of Essex Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Action Plan Template

Achievements Plan targeted for the end of Object-Oriented Information System.

What do I want/need to learn? Provide a specific description of the desired changes (e.g. skills to gain, knowledge to acquire, topics/themes/content to cover)	What do I have to do to achieve this? Some examples, a new/ongoing course, conference, self-development (like wider research or reading), coaching/mentoring, job shadowing	What resources or support will I need? Some examples, teaching staff support, library support, student advisor support, line manager, etc.	How will I measure success? Some examples, appraisals, course assessments, team feedback, tutor feedback	Target dates for review and completion Note that these need to be realistic/achievable
Fully understand UML relationships better and compare their relation to ArchiMate.	Complete Unit 5 and Unit 6 Continue with research to gain deeper insight into the nuances of these associations.	Google Scholar references Books by well-known authors on the subject. Diagram examples from other experience people.	A good grade achieved from the Unit 7 design.	26 July 2021
Gain better experience with Python programming.	Complete the relevant Codio exercises dealing with Python. Continue reading Python material to understand deeper meanings of the language.	I already have the necessary tools to write Python code, so I shall continue to leverage these.	A decent grade from the Unit 11 system implementation wherein I developed a FULL system using Python and OOP.	26 July 2021
Evaluate and critically appraise information systems	Continue to research emerging trends of information systems. Compare emerging trends with those that have been before.	Google Scholar. Internet searches for different types of information systems and the industries they work in.	An acceptable grade based on the reflections of each unit related to this module.	26 July 2021
Improve time management skill.	Give more attention to the amount of work required to deliver a specific output.	.	Ability to deliver each unit's work ahead of schedule.	26 July 2021

Kaplan Open Learning 2019

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1. Introduction to

Object-oriented Information System X M2_Skills_Matrix.pdf +

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Module 2 Skills Matrix

Competency	Essex Graduate	Skill	Skill Level	Evidence
Professional	Literacy, Communication, Language Skills	Express information effectively to technical and non-technical audiences Create documents to aid your communication (reports, diagrams, legal descriptions, plans, manuals and charts)	Expert Expert	Evidenced by the positive feedback from the tutors in module assignments. Tutors consistently rate well the reports I have presented to date.
	Commercial Awareness	Keep current with tools of the industry, as well as emerging technology Seek opportunities to improve and share knowledge of tools and technology that may improve productivity Participate in scientific and professional organisations Emphasise quality, customer satisfaction and fair application of policies. Demonstrate familiarity with codes of conduct for the Computing field.	Proficient Proficient Aware Proficient Trained	I am required to know the latest tools in my line of work. Daily stand-ups require feedback of issues and progress. I enjoy sharing knowledge that aids in a team's growth Evidenced by module assignments and quality of e-portfolio output. I possess an understanding of the BCS Code of Conduct.
	Subject understanding, research, critical thinking, time management	Critically analyse complex ideas in concepts in the field of Computer Science Recognise inconsistencies and gaps in information, and search for additional information when needed.. Explore complex real-world problems in a Computing context	Proficient Proficient Proficient	Working in the IT field for twenty years, must leave a positive mark of experience and complex topics I worked as a software architect which requires a deep attention to detail. This often leads to identifying gaps and providing necessary solutions.
	Ethical Awareness	Comply with the letter and spirit of applicable laws Maintain privacy and confidentiality of company, co-worker and customer information	Proficient Proficient	I obey all laws required of me by my employers. Issues such as spam and phishing are high on my awareness for prevention. Maintaining secure access rights is something I advocate based on the "Least Privilege Required" principle.
Sustainable, Teamwork	Cultural Awareness	Act in the best interest of the community at large - Social (Community) Responsibility	Trained	This often does not have impact on my deliverables at work.
	Teamwork, Leadership and Resilience, Time Management	Collaborate effectively in diverse teams to achieve team goals Meeting team objectives using teamwork skills Demonstrate skills in leadership and team building Give and receive constructive feedback	Proficient Proficient Proficient Proficient	I have garnered experience through the years of how to effectively communicate ideas to a broad spectrum of users, especially the team members I collaborate with. Work experience. Work experience. I have learned through the years how to best approach topics without causing negative feedback. It is interpersonal skills, and not easy to acquire.
	Creativity, Entrepreneurial, Problem solving, Initiative, Decision	Create, discuss and deliver strategies for sustainability for all stakeholders (company, community and environment) Able to make a decision on a complex matter/scenario using multiple sources of information	Aware Proficient	Not relevant in my line of work. Work experience.
	Technical (Data Science)	Technical skills relevant to your degree programme: SQL for database querying Python Programming Java Python noSQL Scripting Language (Python) Statistical Language (R) Gits - repository development and maintenance	Expert Trained Proficient Trained Proficient Trained Aware Proficient	

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Michael Justus

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1. Introduction to

Object-oriented Information System X M2_Assignment_1.pdf +

https://micjoustus.github.io/essex-eport2/assets/artefacts/M2_Assignment_1.pdf

1 of 30 Automatic Zoom

Unit 7 Mid-module Assignment

Design Rationale

Document Contents

Methodology.....	3
UML Diagrams	10
Class Diagram	10
Rationale for Website-to-Order	11

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1. Introduction to

Object-oriented Information System X M2_Assignment_2.pdf +

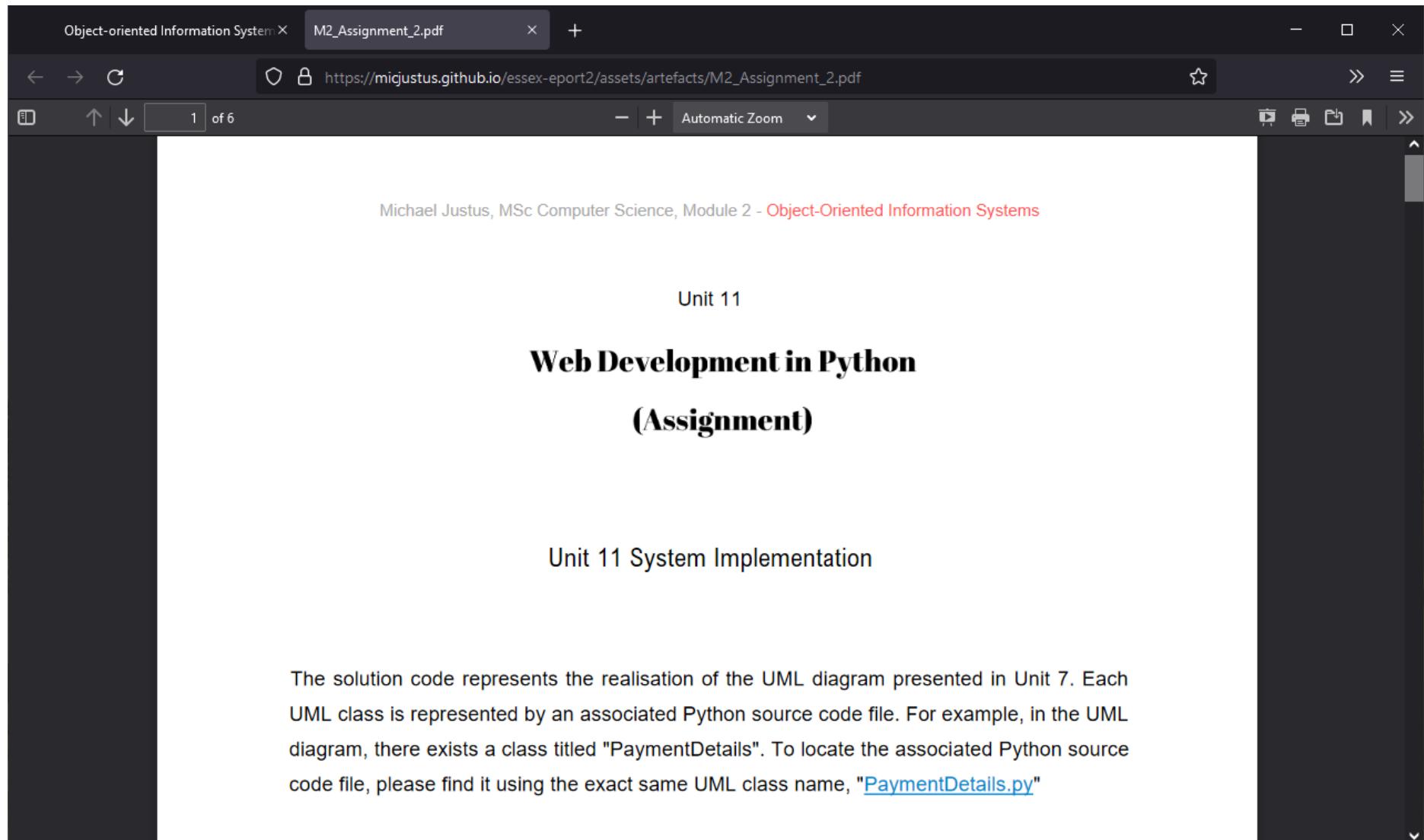
Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 11

Web Development in Python (Assignment)

Unit 11 System Implementation

The solution code represents the realisation of the UML diagram presented in Unit 7. Each UML class is represented by an associated Python source code file. For example, in the UML diagram, there exists a class titled "PaymentDetails". To locate the associated Python source code file, please find it using the exact same UML class name, "[PaymentDetails.py](#)"



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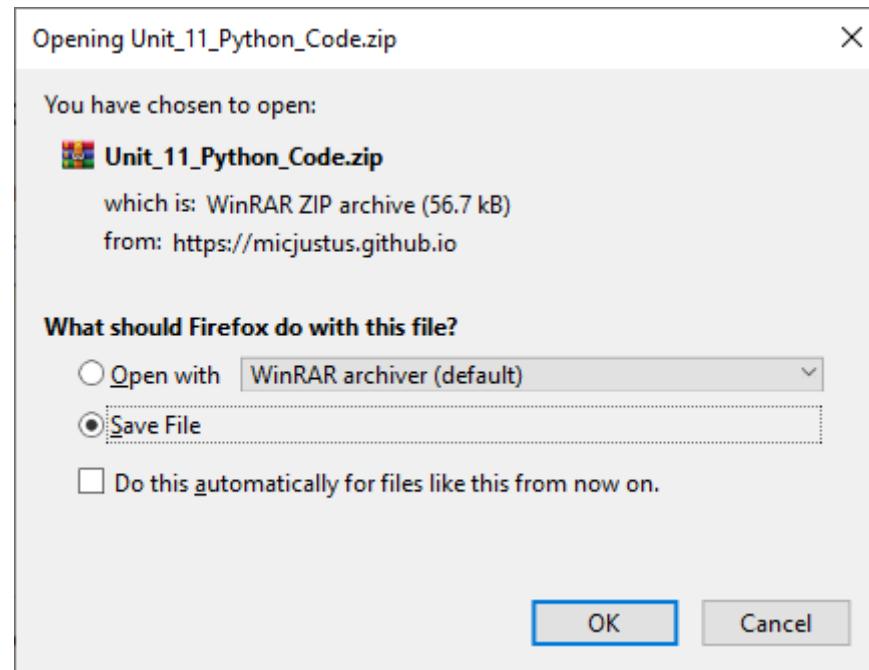
Module Documents

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https://micjustus.github.io/essex-eport2/assets/arteifacts/M2_Unit11-System_Implementation.zip



The screenshot shows a web browser window with the title 'Object-oriented Information System' at the top. The URL in the address bar is <https://migustus.github.io/essex-eport2/modules/m02-ois.html>. The page content is titled 'Introduction to Information Systems'. On the left, there is a sidebar with a red header containing '1. Introduction to Information Systems'. Below this, a numbered list from 2 to 12 is displayed, each with a horizontal line underneath. The first item in the list is highlighted with a red background. The main content area contains two sections: 'Unit Learning Outcomes' and 'Activities'. The 'Unit Learning Outcomes' section includes a list of three bullet points. The 'Activities' section is divided into two boxes: 'Reflective Writing' and 'Discussion Forum'. Each activity box has a 'Click to read more' link at the bottom.

Unit Learning Outcomes

- 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.

Object-oriented Information System X +

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1. **Introduction to Information Systems**

2. Information Systems and their Importance

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

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6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

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Introduction to Information Systems

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 1.

Click to read more

Discussion Forum
Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Click to read more

The screenshot shows a PDF document titled "Reflections-M2-U1.pdf" being viewed in a browser window. The URL is <https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U1.pdf>. The page number "1 of 5" is visible at the top left. The content of the page is as follows:

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 1

Introduction to Information Systems (Reflection)

Information Systems

We touched on defining information systems as being about the transformation of data into information and knowledge. Information systems involves more than just data, and at its simplest, consists of **people**, **data** and **processes**. A level deeper, information systems also consist of hardware, and software (which are classified as “technology”). The “people” and “processes” terms make information systems different from purely technical fields.

I consider this definition valid because abstracting every information system always involves at least these three high-level concepts. Since a process accommodates data *inputs* and

Object-oriented Information System X +

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9. Implementing Databases with SQL
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Click to read more
...

Discussion Forum
Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Click to read more
...

Seminar 1 Preparation
Prepare for seminar which focuses on the En Route Automation Modernization failure. *Please refer to Reflective Writing for additional information*

Click to read more
...

Reading Material

Contact

The screenshot shows a web browser window with the title "Object-oriented Information System X". The address bar displays the URL "https://mijustus.github.io/essex-eport2/modules/m02-oois.html". The page content is organized into several sections: a sidebar on the left with numbered links (9. through 12.), three main content boxes (each with a "Click to read more" button and an ellipsis), and a footer with a "Contact" link. The browser interface includes standard controls like back/forward, search, and zoom.

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System" and "Reflections-M2-U1_Initial_Post.pdf". The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the word "Unit 1" is centered. A large, bold heading "Introduction to Information Systems" follows. Further down, there is a section titled "Discussion Forum – Example of Information System Failure" which contains text about a Worldpay outage in 2016. Another section below discusses the cause of the outage.

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 1

Introduction to Information Systems

Discussion Forum – Example of Information System Failure

In 2016, Worldpay, a UK-based payment processing service, was inoperational for almost twenty-one days. They process around thirty-six million payments each day, which equates to roughly 750 million payments unable to complete. Such an outage had a massive impact on retailers and gamblers who rely on the service.

Worldpay identified the reason for this outage to be a software update to one of their payment gateways that raised numerous error messages, causing settlement delays and eventual overload of error messages. The overload leads to an eventual service shutdown.

Object-oriented Information System X +

← → C https://mijustus.github.io/essex-eport2/modules/m02-oois.html 90% ☆ » □ ×

9. Implementing Databases with SQL
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11. Web Development in Python
12. The Future of Information Systems

Click to read more
...

Discussion Forum
Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Click to read more
...

Seminar 1 Preparation
Prepare for seminar which focuses on the En Route Automation Modernization failure. Please refer to *Reflective Writing* for additional information

Click to read more
...

Reading Material

Contact

The screenshot shows a web browser window with a dark theme. The title bar says 'Object-oriented Information System X'. The address bar shows the URL 'https://mijustus.github.io/essex-eport2/modules/m02-oois.html'. The page content is organized into sections. On the left, there's a sidebar with numbered links: '9. Implementing Databases with SQL', '10. Working with SQL', '11. Web Development in Python', and '12. The Future of Information Systems'. The main area has three large, rounded rectangular boxes. The first box is titled 'Discussion Forum' and contains the text 'Identify an instance of a failure with an information system, with a focus on the reasons for the failure.' with a 'Click to read more' link below it. The second box is titled 'Seminar 1 Preparation' and contains the text 'Prepare for seminar which focuses on the En Route Automation Modernization failure. Please refer to *Reflective Writing* for additional information' with a 'Click to read more' link below it. The third box is titled 'Reading Material' and has a red background. At the bottom of the page, there's a black footer bar with the word 'Contact' in white text.

Object-oriented Information System X Reflections-M2-U1_Seminar1_Prep X +

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1 of 2 Automatic Zoom

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 1

Introduction to Information Systems (Seminar)

Seminar 1 Preparation - En Route Automation Modernization

In this unit, I prepared considerations regarding the En Route Automation Modernization (ERAM) system failure. A brief outline of the failure is, the system went into a looped-restart cycle due to a failure to accommodate flight lack of path data from a U-2 spy aircraft that did not provide altitude data. The failure resulted in numerous delayed and grounded flights on the West Coast of America. Fortunately, there were no accidents due to this failure; however, after that, Flight Aviation Authority (FAA) required altitude data for every flight plan with increased system memory to prevent future failures.

The screenshot shows a web browser window with the title "Object-oriented Information System" at the top. The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "Information Systems and their Importance". On the left, there is a sidebar with a numbered list of 12 items. Item 2, "Information Systems and their Importance", is highlighted with a red background and white text. The main content area includes sections for "Unit Learning Outcomes" and "Activities". The "Unit Learning Outcomes" section contains two bullet points. The "Activities" section includes a "Reflective Writing" box and a "Seminar 1 - En Route Automation Modernization (ERAM) System" box. The "Seminar 1" box features a red arrow pointing right with the date "May 11" and the text "Seminar 1 - En Route Automation Modernization (ERAM) System".

1. Introduction to Information Systems

2. Information Systems and their Importance

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Information Systems and their Importance

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 2.

Click to read more

May 11 Seminar 1 - En Route Automation Modernization (ERAM) System

Discussion around information system failure for ERAM.

Click to read more

Unit Learning Outcomes

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

Object-oriented Information System X +

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1. Introduction to Information Systems

2. Information Systems and their Importance

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6. Hands-on with UML

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Information Systems and their Importance

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 2.

Click to read more

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May 11

Seminar 1 - En Route Automation Modernization (ERAM) System

Discussion around information system failure for ERAM.

Click to read more

Object-oriented Information System X Reflections-M2-U2.pdf +

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1 of 5 - + Automatic Zoom ↻

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 2

Information Systems and their importance (Reflection)

Based on my initial understanding of what constitutes an information system, I further expanded on the understanding by adding hardware and software components. In unit 1, my understanding was narrow—people, data, and processes—and going through this unit's content broadened that view to be more inclusive of the technology components (hardware and software)



Object-oriented Information System X +

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 2.

Click to read more

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May 11 Seminar 1 - En Route Automation Modernization (ERAM) System Discussion around information system failure for ERAM.

Click to read more

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Reading Material

Contact

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Object-oriented Information System X Reflections-M2-U1_Seminar1_Prep X +

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1 of 2 Automatic Zoom

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 1

Introduction to Information Systems (Seminar)

Seminar 1 Preparation - En Route Automation Modernization

In this unit, I prepared considerations regarding the En Route Automation Modernization (ERAM) system failure. A brief outline of the failure is, the system went into a looped-restart cycle due to a failure to accommodate flight lack of path data from a U-2 spy aircraft that did not provide altitude data. The failure resulted in numerous delayed and grounded flights on the West Coast of America. Fortunately, there were no accidents due to this failure; however, after that, Flight Aviation Authority (FAA) required altitude data for every flight plan with increased system memory to prevent future failures.

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The URL is <https://migustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled 'Fundamentals of Object-oriented Design'. On the left, a sidebar lists 12 numbered items. Item 3, 'Fundamentals of Object-oriented Design', is highlighted with a red background. The main content area includes sections for 'Unit Learning Outcomes' (with a list of three goals), 'Activities' (with a 'Reflective Writing' section containing a placeholder for thoughts and a link to read more), and a 'Discussion Forum - Summary' section.

1. Introduction to Information Systems

2. Information Systems and their Importance

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Fundamentals of Object-oriented Design

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 3.

Click to read more

Discussion Forum - Summary

Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Unit Learning Outcomes

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

Object-oriented Information System X +

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5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 3.

Click to read more

...

Discussion Forum - Summary

Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Click to read more

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Practical Activity

This activity for this unit involves putting your object-oriented design skills into practice. Create an object model to represent a supermarket.

Click to read more

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The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U3.pdf". The address bar shows the URL: <https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U3.pdf>. The main content area displays a PDF page. At the top of the page is the text "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this is the heading "Unit 3". The main section is titled "Fundamentals of Object-Oriented Design" in bold black font, with "(Reflection)" in parentheses directly below it. A paragraph of text follows: "This week's consideration focused on the concept of Object-Oriented Design (OOD). We considered terminology and concepts. Also, this unit saw participation in a design activity where I put to the test my understanding of designing an object-oriented model. For programming exercises, OOD was explored in the context of how Python uses OOD principles." At the bottom of the page is the heading "Collaborative Discussion Summary".

Object-oriented Information System X +

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The screenshot shows a web browser window with the title "Object-oriented Information System". The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is a module summary for "m02-oois".

Module Summary:

- 9. Implementing Databases with SQL
- 10. Working with SQL
- 11. Web Development in Python
- 12. The Future of Information Systems

Discussion Forum - Summary:

Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Practical Activity:

This activity for this unit involves putting your object-oriented design skills into practice. Create an object model to represent a supermarket.

Reading Material:

Click to read more
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Object-oriented Information System X Reflections-M2-U3_Summary_Post. X +

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 3

Introduction to Information Systems

Discussion Forum – Example of Information System Failure Summary

Over three weeks, consideration was given to defining information systems (IS). A high-level definition of an information system is a system that processes data with context to provide information. Given this definition, information systems are pervasive in our modern society wherever electronic data processing is required.

Looking into reported IS failures, the single reason information systems fail is an unknown operating condition, whether the condition originates from data, device or human involvement. Many of the discussion points referred to a lack of testing, monitoring or

Object-oriented Information System X +

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9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Click to read more

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Discussion Forum - Summary

Identify an instance of a failure with an information system, with a focus on the reasons for the failure.

Click to read more

...

Practical Activity

This activity for this unit involves putting your object-oriented design skills into practice. Create an object model to represent a supermarket.

Click to read more

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Reading Material

Contact

The screenshot shows a web browser window with a dark theme. The title bar says 'Object-oriented Information System X'. The address bar shows the URL 'https://mijustus.github.io/essex-eport2/modules/m02-oois.html'. The page content is organized into several sections. On the left, there's a sidebar with numbered links: '9. Implementing Databases with SQL', '10. Working with SQL', '11. Web Development in Python', and '12. The Future of Information Systems'. The main area has three main sections: 'Discussion Forum - Summary' (with text about identifying a failure in an information system), 'Practical Activity' (with text about creating an object model for a supermarket), and 'Reading Material' (which is currently selected, indicated by a dark blue background). Each section has a 'Click to read more' link and an ellipsis. At the bottom of the page is a dark blue footer bar with the word 'Reading Material' in white and a 'Contact' link below it.

Object-oriented Information System X Reflections-M2-U3_Practical.pdf +

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 3

Fundamentals of Object-Oriented Design (Practical)

Practical Activity - Creating an object diagram

Summary

I really enjoyed this unit because it challenged me about existing UML modelling skills; caused me to think *why* should (or not) this or that relationship be used? Overall, it was a great activity to participate in because it has practical application in real-world. I admit that though this is unit 3, I referenced reading material from Unit 5 (UML Distilled by Martin Fowler) and other UML

The screenshot shows a web browser window with the title "Object-oriented Information System" at the top. The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "Object-oriented Development using Python". On the left, there is a sidebar menu with numbered items from 1 to 12. Item 4, "Object-oriented Development using Python", is highlighted with a red background. The main content area contains sections for "Unit Learning Outcomes" and "Activities". The "Unit Learning Outcomes" section lists two bullet points: "Design object-oriented models of a system." and "Develop object-oriented software using the Python programming languages.". The "Activities" section includes a "Reflective Writing" box with placeholder text and a "Seminar 2 - Python Programming" box with a date indicator "May 27" and a description of the seminar content.

Object-oriented Development using Python

Unit Learning Outcomes

- Design object-oriented models of a system.
- Develop object-oriented software using the Python programming languages.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 4.
Click to read more

May 27 Seminar 2 - Python Programming
Classes and objects, class functions and methods and inheritance.
Click to read more

Unit Learning Outcomes

- Design object-oriented models of a system.
- Develop object-oriented software using the Python programming languages.

Object-oriented Information System X +

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1. Introduction to Information Systems
2. Information Systems and their Importance
3. Fundamentals of Object-oriented Design
- 4. Object-oriented Development using Python**
5. Introduction to Unified Modelling Language (UML)
6. Hands-on with UML
7. Database Design
8. Hands-on with Database Design
9. Implementing Databases with SQL
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Object-oriented Development using Python

Unit Learning Outcomes

- Design object-oriented models of a system.
- Develop object-oriented software using the Python programming languages.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 4.

Click to read more

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May 27

Seminar 2 - Python Programming
Classes and objects, class functions and methods and inheritance.

Click to read more

The screenshot shows a web browser window with a dark theme. The title bar displays 'Object-oriented Information System X' and 'Reflections-M2-U4.pdf'. The address bar shows the URL <https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U4.pdf>. The main content area displays a PDF document. At the top of the PDF, it says 'Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems'. Below this, the text 'Unit 4' is centered. The main title 'Object-oriented Development with Python' is in bold, followed by '(Reflection)' in a larger, bold font. A paragraph below the title states: 'This week's consideration focused mainly on developing practical development skills using the Python programming language. I also engaged with other students regarding their UML models of a fictitious supermarket model.' Further down, under the heading 'Practical Activity - Creating an object-oriented design', it says: 'I engaged with students to provide feedback and considerations of their object-oriented design'. The browser interface includes standard controls like back/forward, search, and zoom.

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 4

Object-oriented Development with Python (Reflection)

This week's consideration focused mainly on developing practical development skills using the Python programming language. I also engaged with other students regarding their UML models of a fictitious supermarket model.

Practical Activity - Creating an object-oriented design

I engaged with students to provide feedback and considerations of their object-oriented design

Object-oriented Information System X +

Unit Learning Outcomes

- Design object-oriented models of a system.
- Develop object-oriented software using the Python programming languages.

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 4.

Click to read more

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Seminar 2 - Python Programming

May 27 Classes and objects, class functions and methods and inheritance.

Click to read more

...

Reading Material

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 4

**Object-oriented Development using Python
(Seminar)**

Seminar 2 – Python Programming Exercises

MODULE 9 CHALLENGE: CLASSES AND OBJECTS

1. In this challenge, you will create five (5) Person objects with appropriate values for first name, last name, weight, and height.
2. For this exercise, you can use the names p1, p2, p3, etc. for the names of your instantiated objects.
3. Once you have all five objects, create a list and store the objects in the list. Recall, an object is simply an instance of a user-defined type, so the syntax is the same as adding any other variable to a list.
4. Using a for loop, iterate over your list and print out the first names of each of your Person objects that you created. The output should look something like this:

```
class Person:  
    def __init__(self, fname, lname, height, weight):  
        self.firstname = fname  
        self.lastname = lname  
        self.height = height
```

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Object-oriented Information System X +

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1. Introduction to Information Systems

2. Information Systems and their Importance

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

5. **Introduction to Unified Modelling Language (UML)**

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Introduction to Unified Modelling Language (UML)

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 5.
Click to read more
...

Practical Activity
Extend object model from Unit 3 into a UML class diagram.

Unit Learning Outcomes

- 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.

Object-oriented Information System X +

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1. Introduction to Information Systems
2. Information Systems and their Importance
3. Fundamentals of Object-oriented Design
4. Object-oriented Development using Python
- 5. Introduction to Unified Modelling Language (UML)**
6. Hands-on with UML
7. Database Design
8. Hands-on with Database Design
9. Implementing Databases with SQL
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Introduction to Unified Modelling Language (UML)

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 5.

Click to read more

...

Practical Activity
Extend object model from Unit 3 into a UML class diagram.

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U5.pdf". The address bar shows the URL: <https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U5.pdf>. The main content area displays a PDF page. At the top of the page is the text: "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the text "Unit 5" is centered. The main title "Understanding UML" is in bold, followed by "(Reflection)" in a larger, bold font. A paragraph of text follows: "This week's consideration focused mainly on expanding my understanding of how to document and analyse Unified Modelling Language (UML) systems. We moved from simple object diagrams to developing the object diagram into a class diagram. Together with feedback from fellow students during unit 3 and unit 4 regarding UML modelling, I gained a complete understanding of the meaning of the different types of UML relationships and other UML concepts in general." At the bottom of the page, the text "UML Granularity" is centered.

Object-oriented Information System X +

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4. Object-oriented Development using Python

5. **Introduction to Unified Modelling Language (UML)**

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

■ Develop a sequence diagram to model the interactions between objects.
■ Identify and use the correct elements of UML to design a system.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 5.

Click to read more

Practical Activity
Extend object model from Unit 3 into a UML class diagram.

Click to read more

Reading Material

The screenshot shows a web browser window with a dark theme. The address bar indicates the URL is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The main content area is titled 'Object-oriented Information System'. On the left, there's a sidebar with a list of numbered topics from 4 to 12. Topics 5 and 12 are highlighted with a gray background. The main content area contains two large rectangular boxes labeled 'Activities'. The first box is for 'Reflective Writing' and the second for 'Practical Activity'. Each activity box has a 'Click to read more' link and an ellipsis ('...'). At the bottom of the main content area is a dark blue footer bar with the text 'Reading Material'.

Object-oriented Information System X Reflections-M2-U5_Practical.pdf +

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1 of 4 - + Automatic Zoom ▾

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 5

Understanding UML (Practical)

Practical Activity - Creating a class diagram

Summary

I enjoyed this unit (once again) because it challenged me about existing UML modelling skills; caused me to think *why* (or not) to use this or that relationship. For this activity, I focused on the use of **Association Classes** and how best they can be leveraged as part of a class diagram. Of tremendous benefit was the reading material by Martin Fowler in his book titled

The screenshot shows a web browser window with the title "Object-oriented Information System" and the URL <https://micjusztas.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "Hands-on with UML". On the left, a sidebar lists 12 numbered items, with item 6, "Hands-on with UML", highlighted by a red box. The main content area contains sections for "Unit Learning Outcomes" and "Activities". The "Unit Learning Outcomes" section includes a list of tasks: "Identify the potential classes in a system brief" and "Develop a set of UML documentation for a specific scenario". The "Activities" section features a "Reflective Writing" box with a placeholder for thoughts related to Unit 6, and a "Seminar 3 Preparation - Working with UML" box for May 10, which involves developing class, sequence, and activity diagrams for a scenario.

1. Introduction to Information Systems

2. Information Systems and their Importance

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Hands-on with UML

Unit Learning Outcomes

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

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 6.

Click to read more

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Seminar 3 Preparation - Working with UML

May 10

Develop a class diagram, sequence diagram and activity diagram for a given scenario.

Click to read more

Unit Learning Outcomes

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

Object-oriented Information System X +

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1. Introduction to Information Systems
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- 6. Hands-on with UML**
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8. Hands-on with Database Design
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11. Web Development in Python
12. The Future of Information Systems

Hands-on with UML

Unit Learning Outcomes

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

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 6.
Click to read more

May 10 **Seminar 3 Preparation - Working with UML**
Develop a class diagram, sequence diagram and activity diagram for a given scenario.
Click to read more

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System" and "Reflections-M2-U6.pdf". The address bar shows the URL: <https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U6.pdf>. The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the text "Unit 6" is centered. The main title "Hands-on with UML" is in bold, followed by "(Reflection)" in a larger, bold font. A section titled "UML Modelling" is present. At the bottom, there is a paragraph about UML modelling techniques, followed by a section titled "Modelling Principles" in a brownish color.

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 6

Hands-on with UML

(Reflection)

UML Modelling

At this point in the study on using UML modelling techniques, including class diagrams, object diagrams, sequence diagrams and activity diagrams, I feel more informed than when I started the module.

Modelling Principles

Object-oriented Information System X +

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oriented Design

4. Object-oriented Development using Python

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

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11. Web Development in Python

12. The Future of Information Systems

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

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 6.

Click to read more

...

Seminar 3 Preparation - Working with UML
May 10 Develop a class diagram, sequence diagram and activity diagram for a given scenario.

Click to read more

...

Reading Material

57

Object-oriented Information System X Reflections-M2-U6_Seminar3.pdf +

← → C https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U6_Seminar3.pdf ☆ » ≡

1 of 5 - + Automatic Zoom ▾

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 6

Hands-on with UML (Seminar)

Seminar 3 – Working with UML

In this week's seminar, students were tasked to further develop UML modelling skills by generating class, sequence and activity diagrams based on a given scenario.

*Before a patient can see a doctor, or nurse, they will be required to make an appointment.
The appointment will be made by the receptionist. However, before making the appointment,*

The screenshot shows a web browser window with the title "Object-oriented Information System" and the URL "https://mijustus.github.io/essex-eport2/modules/m02-oois.html". The page content is titled "Database Design". On the left, a sidebar lists 12 numbered items, with item 7, "Database Design", highlighted in a red box. The main content area contains two sections: "Unit Learning Outcomes" and "Activities". The "Unit Learning Outcomes" section includes a list of bullet points: "Develop knowledge and skills to apply database design principles" and "Design a database that has been correctly normalised". The "Activities" section is divided into "Reflective Writing" and "Formative Activity".

1. Introduction to Information Systems

2. Information Systems and their Importance

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Database Design

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 7.

Click to read more

...

Formative Activity

Normalise a set of tables from first to third normal form.

Click to read more

Unit Learning Outcomes

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

Object-oriented Information System X +

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1. Introduction to Information Systems
2. Information Systems and their Importance
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5. Introduction to Unified Modelling Language (UML)
6. Hands-on with UML
- 7. Database Design**
8. Hands-on with Database Design
9. Implementing Databases with SQL
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Database Design

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 7.

Click to read more

Formative Activity

Normalise a set of tables from first to third normal form.

Click to read more

Object-oriented Information System X Reflections-M2-U7.pdf +

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Unit 7

Database Design (Reflection)

Normalisation

This module addressed the three stages of normalising data model structures, named as first normal form (1NF), second normal form (2NF) and third normal form (3NF). Each step of normalisation is aimed at **reducing dependencies** such that a single set of attributes (row of one or more columns in relational databases) is **uniquely** identifiable. Normalisation is considered a bottom-up approach whose aim is to reduce redundancy and data inconsistencies (

Object-oriented Information System X +

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9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Click to read more

...

Formative Activity

Normalise a set of tables from first to third normal form.

Click to read more

...

Assignment: System Design

Develop a class diagram, activity and state diagram for a given scenario describing online shopping.

Click to read more

...

Assignment: Feedback

Tutor feedback of submitted work

Click to read more

...

Object-oriented Information System X Reflections-M2-U7_Formative.pdf +

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Unit 7

Normalisation in Practice

In this week's formative exercise, students were tasked to normalise a set of data table to third normal form (3NF).

Normalisation Method

First, I considered the provided table structure:

Properties and Maintenance Tables

Object-oriented Information System X +

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Click to read more

...

Assignment: System Design

Develop a class diagram, activity and state diagram for a given scenario describing online shopping.

Click to read more

...

Assignment: Feedback

Tutor feedback of submitted work

Click to read more

...

Reading Material

Contact

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The URL in the address bar is 'https://mijustus.github.io/essex-eport2/modules/m02-oois.html'. The page content is displayed in three rounded rectangular boxes. The top box contains placeholder text 'Click to read more' and '...'. The middle box is titled 'Assignment: System Design' and describes the task of developing a class diagram, activity, and state diagram for an online shopping scenario. It also contains 'Click to read more' and '...' text. The bottom box is titled 'Assignment: Feedback' and describes tutor feedback of submitted work, also containing 'Click to read more' and '...' text. Below these boxes is a dark blue horizontal bar with the red text 'Reading Material'. At the very bottom of the page is a black footer bar with the white text 'Contact'.

Object-oriented Information System X M2_Assignment_1.pdf

https://micjus.github.io/essex-eport2/assets/arteifacts/M2_Assignment_1.pdf

1 of 30 Automatic Zoom

Unit 7 Mid-module Assignment

Design Rationale

Document Contents

Methodology.....	3
UML Diagrams	10
Class Diagram.....	10
Rationale for Website-to-Order	11

Object-oriented Information System X +

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Click to read more

...

Assignment: System Design

Develop a class diagram, activity and state diagram for a given scenario describing online shopping.

Click to read more

...

Assignment: Feedback

Tutor feedback of submitted work

Click to read more

...

Reading Material

Contact

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The URL in the address bar is 'https://mijustus.github.io/essex-eport2/modules/m02-oois.html'. The page content is organized into three main sections, each enclosed in a light gray rounded rectangle. The first section is titled 'Assignment: System Design' and contains instructions to develop class, activity, and state diagrams for online shopping. The second section is titled 'Assignment: Feedback' and mentions tutor feedback of submitted work. Both sections have a 'Click to read more' link and an ellipsis. A dark blue footer bar at the bottom contains the text 'Reading Material' in red and 'Contact' in white. The browser interface includes standard controls like back/forward, search, and zoom.

Object-oriented Information System X M2_Assignment_1_Feedback.pdf +

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 7

Database Design (Feedback)

Thank you for your mid-module assignment submission which I have enjoyed reading.

For this assignment you needed to use the scenario provided to design and develop a class diagram, an activity diagram for the process of a customer completing an order and a state diagram highlighting the states of an order (and their transitions) for your proposed system.

You needed to draw out the objects, attributes, operations and relationships of the system in a rationale for your analysis (500 words). Please see below some general feedback which I hope you find useful.

The screenshot shows a web browser window with the title "Object-oriented Information System" and the URL "https://mijustus.github.io/essex-eport2/modules/m02-oois.html". The page content is titled "Hands-on with Database Design". On the left, there is a sidebar with a numbered list of 12 items, where item 8, "Hands-on with Database Design", is highlighted with a red background. The main content area contains two sections: "Unit Learning Outcomes" and "Activities". The "Unit Learning Outcomes" section includes a list of tasks: "Develop a structure for a database for a given scenario." and "Create an entity relationship diagram to document your design.". The "Activities" section is divided into two boxes: "Reflective Writing" (with a sub-instruction "Click to read more") and "Collaborative Discussion - Alternatives to SQL" (with a sub-instruction "Click to read more").

Unit Learning Outcomes

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

Object-oriented Information System X +

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1. Introduction to Information Systems
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6. Hands-on with UML
7. Database Design
- 8. Hands-on with Database Design**
9. Implementing Databases with SQL
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Hands-on with Database Design

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 8.

Click to read more

Collaborative Discussion - Alternatives to SQL

Consider a worked example of database design from beginning to end and construct an ERD.

Click to read more

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U8.pdf". The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the text "Unit 8" is centered. The main heading is "Hands-on with Database Design" followed by "(Reflection)". Underneath the heading, there is a paragraph of text. The URL in the address bar is "https://micjustus.github.io/essex-eport2/assets/arteifacts/Reflections-M2-U8.pdf".

The focus in the week was on an introduction to developing entity-relationship diagrams (ERD) that help drive the structure of a (relational) database. As part of the consideration of developing database structures, there was an engagement in a collaborative discussion to consider alternates to traditional relational SQL structures. The main alternative considered is NoSQL databases.

Graph databases are interesting NoSQL databases, and I have had the fortune to work with them for several years. The most significant difference between graph databases and relational databases is the idea that relationships are first-class citizens. This concept is essential in graph databases. In relational databases, we focus solely on the data sets (the schema) and

Object-oriented Information System X +

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5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 8.

Click to read more
...

Collaborative Discussion - Alternatives to SQL
Consider a worked example of database design from beginning to end and construct an ERD.

Click to read more
...

Collaborative Discussion - Responses
Continue the discussion concerning alternatives to traditional relational database systems.

Click to read more
...

This screenshot shows a web browser window displaying a module page titled 'Hands-on with Database Design'. The left sidebar lists twelve topics, with topic 8 highlighted. The main content area features three activity boxes: 'Reflective Writing' (with a note about thoughts, findings, or research related to Unit 8), 'Collaborative Discussion - Alternatives to SQL' (with a note about considering a worked example of database design and constructing an ERD), and 'Collaborative Discussion - Responses' (with a note about continuing the discussion concerning alternatives to traditional relational database systems). Each activity box includes a 'Click to read more' link and an ellipsis (...).

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U8_Initial_Post.pdf X". The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below that is the title "Unit 8". The main section is titled "Hands-on with Database Design". Underneath this, there is a heading "Discussion Forum – Alternatives to SQL". A large block of text follows, discussing the popularity of NoSQL databases due to their ability to manage large volumes of data efficiently, support horizontal scalability, and be schema-agnostic. It also mentions that problems NoSQL databases resolve are inflexible schemas and lack of scalability. The text concludes by explaining that NoSQL databases adhere to the BASE principle (Basically Available-Soft state-Eventual consistency) rather than the traditional ACID principle (Atomic, Consistent, Isolated, Durable). The URL in the browser's address bar is https://micjustus.github.io/essex-eport2/assets/arteifacts/Reflections-M2-U8_Initial_Post.pdf.

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Unit 8

Hands-on with Database Design

Discussion Forum – Alternatives to SQL

NoSQL databases are gaining popularity in recent years because of their claim to efficiently manage large volumes of data, support horizontal scalability, and be schema-agnostic (Fowler, 2015). Two main points stand out from a survey by Couchbase regarding relational databases: inflexible schemas and a lack of scalability (Lazzar, 2012). Problems NoSQL databases resolve because they adhere to Basically Available-Soft state-Eventual consistency (BASE) (Chandra, 2015). BASE differs from the traditional ACID principle (Atomic, Consistent, Isolated, Durable) in the degree of transaction support required of data. For

Object-oriented Information System X +

← → C https://mijustus.github.io/essex-eport2/modules/m02-oois.html 90% ☆ ≫ ⌂

10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Collaborative Discussion - Alternatives to SQL
Consider a worked example of database design from beginning to end and construct an ERD.

Click to read more

Collaborative Discussion - Responses
Continue the discussion concerning alternatives to traditional relational database systems.

Click to read more

Database Design
Produce an entity relationship diagram based on the mid-module assignment submitted in unit 7.

Click to read more

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The URL in the address bar is 'https://mijustus.github.io/essex-eport2/modules/m02-oois.html'. The page content is organized into three main sections, each enclosed in a rounded rectangle:

- Collaborative Discussion - Alternatives to SQL**: Description: Consider a worked example of database design from beginning to end and construct an ERD. Action: Click to read more.
- Collaborative Discussion - Responses**: Description: Continue the discussion concerning alternatives to traditional relational database systems. Action: Click to read more.
- Database Design**: Description: Produce an entity relationship diagram based on the mid-module assignment submitted in unit 7. Action: Click to read more.

On the left side of the main content area, there is a vertical sidebar with the following navigation links:

- 10. Working with SQL
- 11. Web Development in Python
- 12. The Future of Information Systems

Object-oriented Information System X Reflections-M2-U8_Discussions.pdf +

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 8

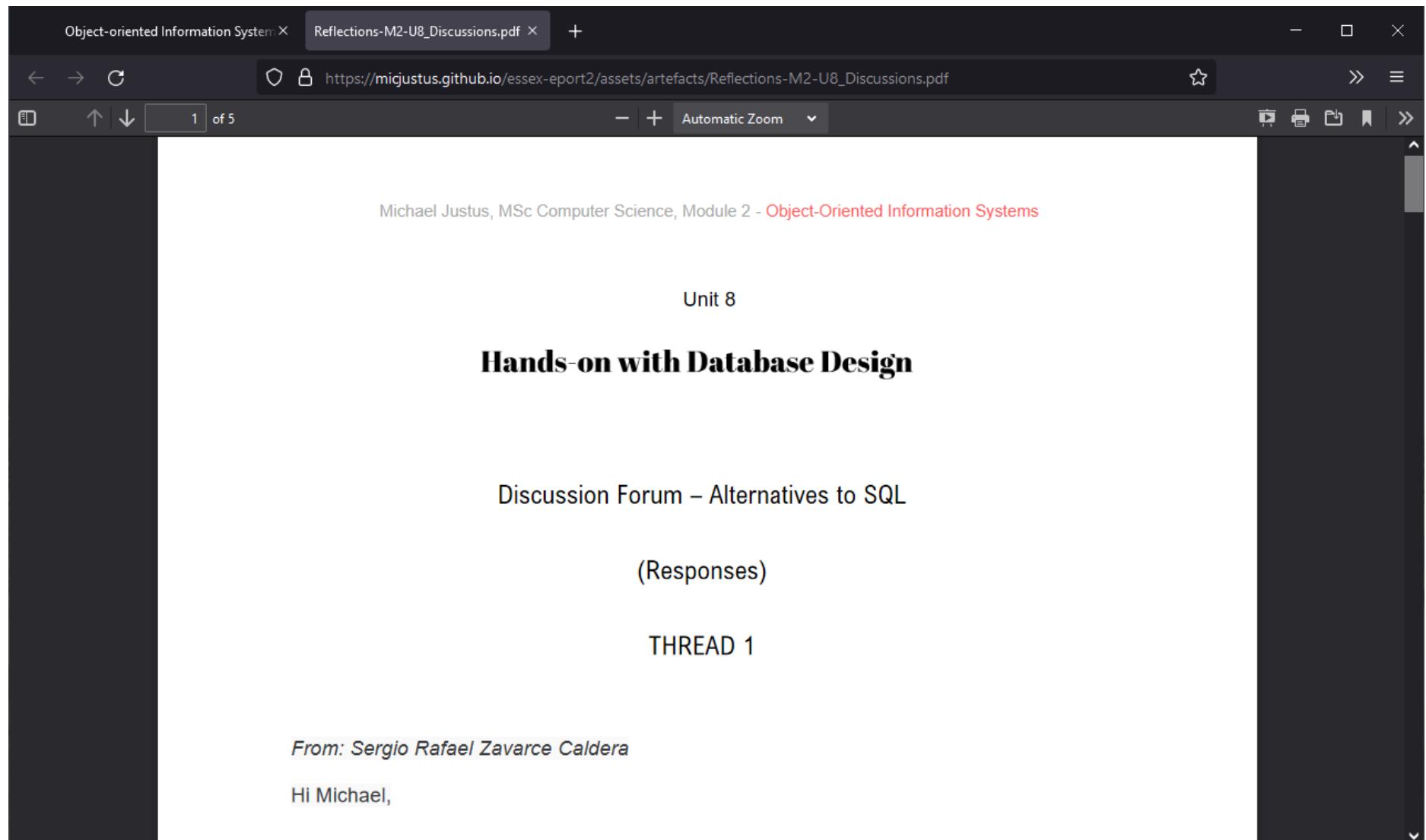
Hands-on with Database Design

Discussion Forum – Alternatives to SQL
(Responses)

THREAD 1

From: Sergio Rafael Zavarce Caldera

Hi Michael,



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Collaborative Discussion - Responses
Continue the discussion concerning alternatives to traditional relational database systems.

Click to read more

Database Design
Produce an entity relationship diagram based on the mid-module assignment submitted in unit 7.

Click to read more

Reading Material

Contact

Address Mail Phone

Object-oriented Information System X Reflections-M2-U8_Practical.pdf +

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 8

Hands-on with Database Design (Practical)

In this unit, I developed an Entity-Relationship diagram for the system modelled in unit 7.

The Entity-Relationship diagram illustrates the following entities and their relationships:

- DeliveryOption**:
 - Attributes: Id (INTEGER), Delivery_Cost (FLOAT), Delivery_Estimate (INTEGER), Option_Type (VARCHAR(8)).
 - Relationships: A one-to-many relationship with **DeliveryDetails** (Delivery_Option_Id = Id).
- DeliveryDetails**:
 - Attributes: Id (INTEGER), Delivery_Address_Id (INTEGER), Delivery_Option_Id (INTEGER).
 - Relationships: A one-to-many relationship with **DeliveryAddress** (Delivery_Address_Id = Id). It also has a self-referencing many-to-many relationship with itself (Delivery_Details_Id = Id).
- DeliveryAddress**:
 - Attributes: Id (INTEGER), Country (VARCHAR(40)), Line1 (VARCHAR(200)), Line2 (VARCHAR(200)), Line3 (VARCHAR(200)), Postcode (VARCHAR(10)).
- PaymentDetails**:
 - Attributes: Id (INTEGER), Account_Number (VARCHAR(30)), Bst_Code (VARCHAR(8)), Card_Holder (VARCHAR(30)), Payment_Date (DATETIME), Promotion_Code_Id (INTEGER).
 - Relationships: A one-to-many relationship with **OrderCheckout** (Payment_Details_Id = Id). It also has a self-referencing many-to-many relationship with itself (Promotion_Code_Id = Id).
- OrderCheckout**:
 - Attributes: Order_Id (INTEGER), Checkout_Id (INTEGER), Delivery_Address_Id (INTEGER), Total_Vat (FLOAT), Payment_Details_Id (INTEGER), Website_Id (INTEGER).
 - Relationships: A one-to-many relationship with **DeliveryAddress** (Delivery_Address_Id = Id).
- SecureStorage**:
 - Attributes: Storage_Key (VARCHAR(200)), Data (TEXT).

The screenshot shows a web browser window with the title "Object-oriented Information System" and the URL <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "Implementing Databases with SQL". On the left, there is a sidebar menu with the following items:

1. Introduction to Information Systems
2. Information Systems and their Importance
3. Fundamentals of Object-oriented Design
4. Object-oriented Development using Python
5. Introduction to Unified Modelling Language (UML)
6. Hands-on with UML
7. Database Design
8. Hands-on with Database Design
- 9. Implementing Databases with SQL** (highlighted with a red background)
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

The main content area contains the following sections:

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 9.

Click to read more

...

Collaborative Discussion - Responses

Continue to engage fellow students in the discussion about alternates to SQL databases.

Unit Learning Outcomes

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

Object-oriented Information System X +

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1. Introduction to Information Systems
2. Information Systems and their Importance
3. Fundamentals of Object-oriented Design
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6. Hands-on with UML
7. Database Design
8. Hands-on with Database Design
- 9. Implementing Databases with SQL**
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Implementing Databases with SQL

Unit Learning Outcomes

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

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 9.

Click to read more

...

Collaborative Discussion - Responses
Continue to engage fellow students in the discussion about alternates to SQL databases.

The screenshot shows a web browser window with a dark theme. The title bar displays 'Object-oriented Information System X' and 'Reflections-M2-U9.pdf'. The address bar shows the URL <https://micjustus.github.io/essex-eport2/assets/arteifacts/Reflections-M2-U9.pdf>. The main content area displays a PDF page. At the top of the page is the text 'Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems'. Below this is the heading 'Unit 9'. The main title of the document is 'Implementing Databases with SQL (Reflection)'. A descriptive paragraph follows, stating: 'This unit dealt with SQL language to query and manipulate databases and addressed the need to understand access security aspects of a SQL-based database. The majority of the SQL exercises used MySQL. However, the concepts apply to other SQL implementations, such as Oracle's SQL implementation or even Microsoft's SQL Server. *For examples of DML and DDL SQL exercises, please refer to Unit 10: Working with SQL - Codio Exercises.*' At the bottom of the page, the heading 'SQL Queries' is visible, along with the note 'Two categories of SQL queries exist.'

Object-oriented Information System X Reflections-M2-U9.pdf X +

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5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 9.

Click to read more

Collaborative Discussion - Responses
Continue to engage fellow students in the discussion about alternates to SQL databases.

Click to read more

Reading Material

Contact

Object-oriented Information System X Reflections-M2-U9_Discussions_Res X +

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Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 9

Implementing Databases with SQL

Discussion Forum – Alternatives to SQL
(Respond to Fellow Students' Discussions)

THREAD 1

From: Michael Justus

Hi Suresh,

When researching the topic of NoSQL databases, one point always seems to stand out: their ability to handle a large volume of data (you mentioned "Size of data"). But,

The screenshot shows a web browser window with the title "Object-oriented Information System" and the URL <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "Working with SQL". On the left, there is a sidebar with a numbered list of modules:

- 1. Introduction to Information Systems
- 2. Information Systems and their Importance
- 3. Fundamentals of Object-oriented Design
- 4. Object-oriented Development using Python
- 5. Introduction to Unified Modelling Language (UML)
- 6. Hands-on with UML
- 7. Database Design
- 8. Hands-on with Database Design
- 9. Implementing Databases with SQL
- 10. Working with SQL** (highlighted with a red box)
- 11. Web Development in Python
- 12. The Future of Information Systems

The main content area contains two sections: "Unit Learning Outcomes" and "Activities".

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 10.
Click to read more

Codio Exercises - MySQL
Continue coding exercises to gain experience with MySQL.

Unit Learning Outcomes

- 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.

Object-oriented Information System X +

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6. Hands-on with UML
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8. Hands-on with Database Design
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Working with SQL

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 10.

Click to read more

Codio Exercises - MySQL
Continue coding exercises to gain experience with MySQL.

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U10.pdf". The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the text "Unit 10" is centered. The main title "Working with SQL" is in bold, followed by "(Reflection)" in a larger, bold font. A descriptive paragraph follows: "This week's unit focused on using SQL to implement a database design. Please refer to Unit 10 – Codio Exercises – MySQL for sample SQL statements used." Further down, the section "SQL versus T-SQL versus PL-SQL" is introduced with a bullet point: "• Structured Query Language (SQL).".

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 10

Working with SQL

(Reflection)

This week's unit focused on using SQL to implement a database design. *Please refer to Unit 10 – Codio Exercises – MySQL for sample SQL statements used.*

SQL versus T-SQL versus PL-SQL

On the surface, it may seem that SQL and T-SQL refer to the same language. However, below are a few key differences I discovered in researching this topic.

- *Structured Query Language (SQL).*

Object-oriented Information System X +

← → C https://mijustus.github.io/essex-eport2/modules/m02-oois.html 90% ☆ » ≡

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 10.

Click to read more

Codio Exercises - MySQL
Continue coding exercises to gain experience with MySQL.

Click to read more

Discussion Forum - Summary

Click to read more

The screenshot shows a web browser window with a dark theme. The address bar displays the URL <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The main content area is titled 'Activities'. It contains three sections: 'Reflective Writing', 'Codio Exercises - MySQL', and 'Discussion Forum - Summary'. Each section has a title, a brief description, and a link labeled 'Click to read more'. To the left of the activities, there is a sidebar with a list of numbered items from 5 to 12, with item 10 highlighted in a box. The sidebar also includes links for 'Working with SQL', 'Web Development in Python', and 'The Future of Information Systems'.

The screenshot shows a web browser window with a dark theme. The title bar displays two tabs: "Object-oriented Information System" and "Reflections-M2-U10_Practical.pdf". The main content area shows a PDF page. At the top of the page is the text "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the text "Unit 10" is centered. The main title "Working with SQL" is in bold, followed by "(Practical)" in a larger, bold font. A descriptive paragraph follows: "In these exercises, exposure was given to create databases within MySQL, create, drop and modify tables, insert data into tables, update existing data in tables, delete tables databases and existing table data. Also considered, was the role of constraints such as primary keys and foreign keys. Lastly, this exercise tackled aggregate functions available within MySQL." At the bottom of the page, there are two links: "Introduction to MySQL" and "Challenge: Select Table Data". The browser interface includes standard controls like back/forward, search, and zoom, along with a navigation bar showing "1 of 7".

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 10

Working with SQL

(Practical)

In these exercises, exposure was given to create databases within MySQL, create, drop and modify tables, insert data into tables, update existing data in tables, delete tables databases and existing table data. Also considered, was the role of constraints such as primary keys and foreign keys. Lastly, this exercise tackled aggregate functions available within MySQL.

[Introduction to MySQL](#)

[Challenge: Select Table Data](#)

Object-oriented Information System X +

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10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

Codio Exercises - MySQL
Continue coding exercises to gain experience with MySQL.

Click to read more

Discussion Forum - Summary

Click to read more

Reading Material

Contact

Address Mail Phone

Object-oriented Information System X Reflections-M2-U10_Summary_Post X +

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1 of 2 - + Automatic Zoom ▾

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 10

Working with SQL (Summary Post)

Discussion Forum – Alternates to SQL

Over three weeks, consideration was given to the trend of NoSQL databases. NoSQL databases do not have the notion of schema, which is their most significant benefit compared to relational databases. “Benefit” because their focus is on quick data retrieval and storage of semi-structured or unstructured data. Another advantage of NoSQL databases is their open-source nature, which leads to lower setup and administration costs than relational databases. Yet another benefit is that the semi-structured or unstructured

The screenshot shows a web browser window with the title "Object-oriented Information System". The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is a module description for "Web Development in Python". On the left, there is a sidebar with a list of 12 topics, numbered 1 to 12. Topic 11, "Web Development in Python", is highlighted with a red background. The main content area includes sections for "Unit Learning Outcomes" and "Activities".

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 11.
Click to read more

Codio - Introduction to Flask
Learn to instantiate a simple web server and show data via a template.

Unit Learning Outcomes

- 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.

Object-oriented Information System X +

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1. Introduction to Information Systems
2. Information Systems and their Importance
3. Fundamentals of Object-oriented Design
4. Object-oriented Development using Python
5. Introduction to Unified Modelling Language (UML)
6. Hands-on with UML
7. Database Design
8. Hands-on with Database Design
9. Implementing Databases with SQL
10. Working with SQL
11. Web Development in Python
12. The Future of Information Systems

Web Development in Python

Unit Learning Outcomes

- 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.

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 11.

Click to read more

Codio - Introduction to Flask
Learn to instantiate a simple web server and show data via a template.

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System" and "Reflections-M2-U11.pdf". The address bar shows the URL: <https://micjustus.github.io/essex-eport2/assets/artefacts/Reflections-M2-U11.pdf>. The page content is a PDF document. At the top, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below that is the title "Unit 11" and the main section title "**Web Development in Python** **(Reflection)**". The text "This week's unit focused on familiarising the students with a basic web app server and using Python to display data on a web page." is followed by a large empty space. Further down, the section "Interface Paradigm: MVC" is introduced, with the text "Introducing the Model-View-Controller (MVC) pattern was an excellent way to present the basic building blocks of displaying information via web pages. The basic premise behind MVC".

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 11

Web Development in Python

(Reflection)

This week's unit focused on familiarising the students with a basic web app server and using Python to display data on a web page.

Interface Paradigm: MVC

Introducing the Model-View-Controller (MVC) pattern was an excellent way to present the basic building blocks of displaying information via web pages. The basic premise behind MVC

Object-oriented Information System X +

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Database Design

- 8. Hands-on with Database Design
- 9. Implementing Databases with SQL
- 10. Working with SQL
- 11. Web Development in Python**
- 12. The Future of Information Systems

Thoughts, findings or additional research related to Unit 11.

Click to read more

Codio - Introduction to Flask
Learn to instantiate a simple web server and show data via a template.

Click to read more

Assignment: System Implementation
Implement Python code for the system design proposed in unit 7.

Click to read more

Assignment: System Implementation (ZIP)
undefined

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The address bar contains the URL 'https://mijustus.github.io/essex-eport2/modules/m02-oois.html'. The page content is organized into a sidebar and a main area. The sidebar lists topics numbered 8 through 12. Topic 11, 'Web Development in Python', is highlighted with a light gray box. The main area contains several callout boxes. One box is titled 'Thoughts, findings or additional research related to Unit 11.' with a link 'Click to read more' and three dots. Another box is titled 'Codio - Introduction to Flask' with a description 'Learn to instantiate a simple web server and show data via a template.' and a link 'Click to read more'. A third box is titled 'Assignment: System Implementation' with a description 'Implement Python code for the system design proposed in unit 7.' and a link 'Click to read more'.

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U11_Practical.pdf". The main content area displays a PDF page. At the top of the page is the text "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this is the heading "Unit 11". The main title of the document is "Web Development in Python" followed by "(Practical)" in a larger, bold font. The text "In this exercise, we were introduced to the use of Flask as a simple web server. Together with Flask, exposure was made to Jinja templates." is present. At the bottom of the page is the heading "Security Considerations for Web Apps". The text "Browsers have implemented many new security features over the years to aid securing web applications. For example, HttpOnly that ensures cookies are inaccessible from JavaScript, X-Frame-Options to prevent pages being hosted in IFRAME and the introduction of JSON functionality such as `JSON.parse()` that safely parses JSON content without executing" is visible. A vertical scrollbar is on the right side of the browser window.

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 11

Web Development in Python (Practical)

In this exercise, we were introduced to the use of Flask as a simple web server. Together with Flask, exposure was made to Jinja templates.

Security Considerations for Web Apps

Browsers have implemented many new security features over the years to aid securing web applications. For example, `HttpOnly` that ensures cookies are inaccessible from JavaScript, `X-Frame-Options` to prevent pages being hosted in IFRAME and the introduction of JSON functionality such as `JSON.parse()` that safely parses JSON content without executing

Object-oriented Information System X +

data via a template.

Click to read more

...

Assignment: System Implementation
Implement Python code for the system design proposed in unit 7.

Click to read more

...

Assignment: System Implementation (ZIP)
undefined

Click to download content

...

Reading Material ^

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content includes several sections: one with placeholder text 'data via a template.', two sections for 'Assignment: System Implementation' (one with Python code implementation details and another with a ZIP file download), and one for 'Assignment: System Implementation (ZIP)' (with undefined details). A 'Reading Material' section is at the bottom. The browser interface includes standard controls like back/forward, search, and zoom.

Object-oriented Information System X M2_Assignment_2.pdf +

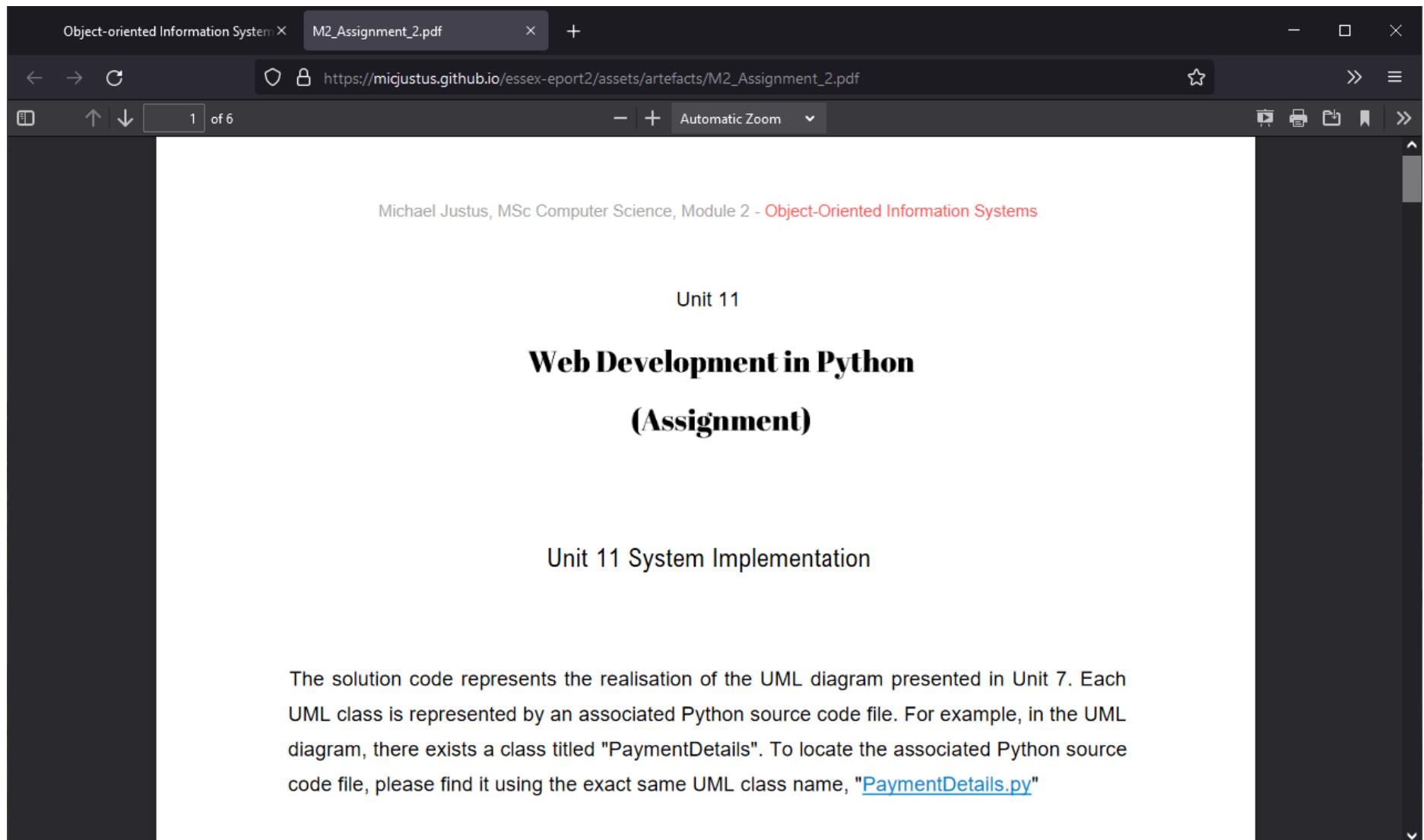
Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Unit 11

Web Development in Python (Assignment)

Unit 11 System Implementation

The solution code represents the realisation of the UML diagram presented in Unit 7. Each UML class is represented by an associated Python source code file. For example, in the UML diagram, there exists a class titled "PaymentDetails". To locate the associated Python source code file, please find it using the exact same UML class name, "[PaymentDetails.py](#)"



Object-oriented Information System X +

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data via a template.

Click to read more

...

Assignment: System Implementation
Implement Python code for the system design proposed in unit 7.

Click to read more

...

Assignment: System Implementation (ZIP)
undefined

Click to download content

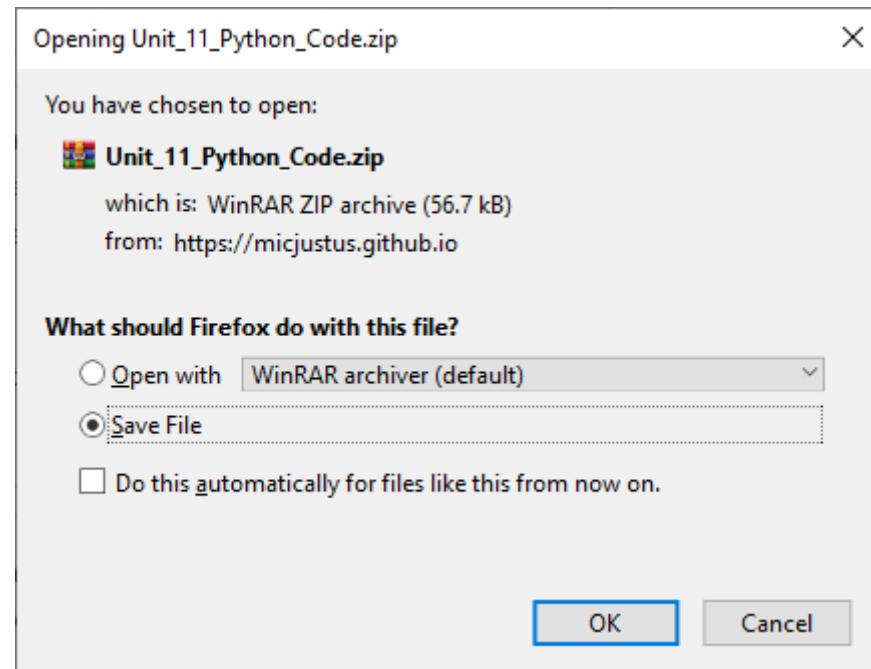
...

Reading Material ^

The screenshot shows a web browser window with the title 'Object-oriented Information System'. The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content includes three main sections:

- Assignment: System Implementation**: Description: Implement Python code for the system design proposed in unit 7.
- Assignment: System Implementation (ZIP)**: Description: undefined. Includes a link to download content.
- Reading Material**: A dark blue header with white text.

Each section has a 'Click to [action]' link and an ellipsis (...).



The screenshot shows a web browser window titled "Object-oriented Information System". The URL is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "The Future of Information Systems". On the left, there is a sidebar with a numbered list from 1 to 12. Item 12, "The Future of Information Systems", is highlighted with a gray background. The main content area contains two sections: "Unit Learning Outcomes" and "Activities". The "Unit Learning Outcomes" section includes a bulleted list of three items. The "Activities" section contains two boxes: "Reflective Writing" and "Blog Post - Emerging Trends in Information Systems".

1. Introduction to Information Systems

2. Information Systems and their Importance

3. Fundamentals of Object-oriented Design

4. Object-oriented Development using Python

5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. The Future of Information Systems

The Future of Information Systems

Unit Learning Outcomes

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

Activities

Reflective Writing

Thoughts, findings or additional research related to Unit 12.

Click to read more

Blog Post - Emerging Trends in Information Systems

Consideration given to emerging technology and its implications

Unit Learning Outcomes

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

Object-oriented Information System X +

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The screenshot shows a web browser window with the title "Object-oriented Information System". The URL in the address bar is <https://mijustus.github.io/essex-eport2/modules/m02-oois.html>. The page content is titled "The Future of Information Systems". On the left, there is a sidebar with a list of 12 modules, numbered 1 to 12. Module 12, "The Future of Information Systems", is highlighted with a grey background. The main content area contains two sections: "Unit Learning Outcomes" and "Activities".

Unit Learning Outcomes

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

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 12.
Click to read more

Blog Post - Emerging Trends in Information Systems
Consideration given to emerging technology and its implications

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U12.pdf". The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this, the text "Unit 12" is centered. The main title "The Future of Information Systems" is bold and centered, followed by "(Reflection)" in a slightly smaller bold font. A paragraph of text follows: "This week's unit focused on the importance of information system security, privacy and emerging technologies. The following short write-up provides some research I undertook to understand security and privacy concerns within information systems." At the bottom of the PDF content, there is a section titled "Information Systems (I.S.): Privacy and Security (Summary)". Below this, a note in italicized text reads: "Please see the Blog Post for Unit 12 that deals with the privacy and security of information systems concerning "Bring Your Own Device".

Object-oriented Information System X +

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5. Introduction to Unified Modelling Language (UML)

6. Hands-on with UML

7. Database Design

8. Hands-on with Database Design

9. Implementing Databases with SQL

10. Working with SQL

11. Web Development in Python

12. **The Future of Information Systems**

Activities

Reflective Writing
Thoughts, findings or additional research related to Unit 12.

Click to read more
...

Blog Post - Emerging Trends in Information Systems
Consideration given to emerging technology and its implications

Click to read more
...

Reading Material

Contact

The screenshot shows a web browser window with a dark theme. The title bar has two tabs: "Object-oriented Information System X" and "Reflections-M2-U12_Blog_Post.pdf X". The main content area displays a PDF document. At the top of the PDF, it says "Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems". Below this is a section header "Blog Post: the rise of BYOD". The text discusses the trend of "Bring Your Own Device" and its implications for business and security. A section titled "Benefits" is present, followed by a paragraph from Van Der Heijden (2004) about hedonic and utilitarian benefits. At the bottom of the PDF content, there is a line of text that appears to be cut off or partially visible.

Michael Justus, MSc Computer Science, Module 2 - Object-Oriented Information Systems

Blog Post: the rise of BYOD

"Bring Your Own Device" is a rising trend where employees utilise their own devices within a workplace to access resources like an email server. In this brief post, I look at BYOD, its benefits, implications for business, and security and privacy issues.

Benefits

Van Der Heijden (2004) identifies two rather insightful benefits of information systems: "hedonic benefits" and "utilitarian benefits". The terms reflect why we use information systems: because of the intrinsic *benefit* we derive from their usage. "hedonic" refers to enjoyment or happiness obtained. In contrast, "utilitarian" refers to functional benefits often related to financial rewards. Such benefits often guide users to determine the inherent risk required to use a system or even how much their data remains private. (Dincelli et al., 2017)

A BYOD strategy offers many benefits, such as reducing the purchase and maintenance cost

The screenshot shows a web browser window with the title "Object-oriented Information System X". The URL in the address bar is <https://micjustus.github.io/essex-eport2/modules/m02-oois.html>. The page content includes a header with a house icon and the name "Michael Justus" in red. Below the header is a section titled "Object-oriented Information Systems" with a bulleted list of learning objectives. Further down are sections for "Module Documents" with links to various assignments and reflections.

Object-oriented Information Systems

- 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.

Module Documents

[OOIS Reflection](#) [Project Reflection](#) [Unit Reflections](#)

[Action Plan](#) [Skills Matrix](#) [Assignment: System Design](#)

[Assignment: System Implementation](#) [Assignment: System Implementation \(ZIP\)](#)

Electronic Learning Portfolio - About

https://mijustus.github.io/essex-eport2/about.html

About Me

Biography

Hi, welcome. My name is Michael Justus and I enjoy creating software systems. It's my thang.

Below are some of the tools, languages and databases I have used through life. Like an uncooked Brussel Sprout, the list is bland without a little something extra. In the IT industry, if there is one maxim that remains true after many years

The only constant is 'change'

[C#](#) [Delphi](#) [JavaScript](#) [TypeScript](#) [T-SQL](#) [CSS 3](#) [HTML 5](#) [Angular 9](#)
[Windows Presentation/Communication Foundation](#) [REST](#) [Couchbase](#) [neo4j Graph DB](#) [UML](#)
[TOGAF](#) [ArchiMate](#)

The CV

So, an MSc?

Behind every beautiful garden flower lie tails of seeds and bulbs, planted by a gardener, whose

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So, an MSc?

Behind every beautiful garden flower, lie toils of seeds and bulbs, planted by a gardener, whose desire is the delight of colourful summer splendour to their eyes.



TULIPS IN APRIL, 2019 AT THE DUTCH KEUKENHOF GARDENS IN LISSE.

Knowledge is as the beautiful tulips above: it takes hard work, but the outcome is a glorious display in due time. So, likewise, taking an MSc in Computer Science is for no other reason than to add to the garden of my mind; to allow new ideas to blossom. I believe an MSc may enrich my life,

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Why Computer Science?

I started my current career in software development, many moons ago. I chose software because of its problem-solving nature; the thrill of commanding a machine to bow to its human overlord! (Oh the irony Artificial Intelligence poses). It was a journey of thrilling adventure and excitement to write the first program in Basic and Pascal and to uncover the nuances of manipulating code to make small, uninteresting games or programs.

I suppose, looking back on life, computer science formed how I think, or perhaps how I think is why I gravitated toward computers, their algorithms and systems. I cannot tell. I think in some way, the journey was set the moment my mother brought home a new "toy", a computer. And the inner intrigues grew from there.

What have you learned in your career?

- *The old is new; yet the new becomes old.* New framework, same concept. The industry started with mainframes and client-server together with thin clients. Through the years, industry then moved to the idea of thick clients and PCs (away from mainframes). Yet today, the industry once more moves to client-server models (aka, cloud services, albeit with numerous differences, though the concept mimicks what came before)

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Electronic Learning Portfolio - About

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- *You cannot know everything.* Many frameworks comes and go, and there will always be a new one around the corner that promises some new functionality which was not present in the existing frameworks. Keeping up with each and every new tool on the market is unproductive; better to rely on those who *do* specialise in the new tools and frameworks.
- *Team-work trumps self-work.* Working collaboratively leads to better success. While there certainly are moments of time to shine as a single, atomic entity, majority of time is best spent working with team members.
- *Be humble, willing to learn.* There exists a saying, "*Rotten apple spoils the cart*". It refers to the impact negative behaviour can have on those around us. How wonderful for progress when team members are willing to take advice, guidance or constructive feedback! Indeed, I have found it wonderful to freely share knowledge with those around me that aids in their upliftment.

What have you learned in your career?

- **The old is new; yet the new becomes old.** New framework, same concept. The industry started with **mainframes** and **client-server** together with **thin clients**. Through the years, industry then moved to the idea of **thick clients** and **PCs** (away from mainframes). Yet today, the industry once more moves to client-server models (aka, **cloud** services, albeit with numerous differences, though the *concept* mimicks what came before).
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C# Delphi JavaScript TypeScript T-SQL CSS 3 HTML 5 Angular 9
Windows Presentation/Communication Foundation REST Couchbase neo4j Graph DB UML
TOGAF ArchiMate

The CV

So, an MSc?

https://micjustus.github.io/essex-eport2/assets/artefacts/Michael Justus Resume_TS.pdf

Electronic Learning Portfolio - About X Michael Justus - Michael Justus Resi X +

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1 of 4 Automatic Zoom

MICHAEL JUSTUS

PERSONAL DETAILS

Email: micjustus@gmail.com Mobile: 0741 758 2942
Post Code: RG14 2EJ LinkedIn: <https://www.linkedin.com/in/devarch-michael-justus/>

PROFILE

Technical Architect / Senior Software Engineer with 15+ years of experience across various industries, including financials & pensions, transportation, waste management investment management and supply chain risk management. Has designed and developed microservice architectures, APIs, asset tracking solutions, web front-ends, service-based back-ends and supporting data models (for relational, document or graph storage). Solutions enabled organisations to govern data flow reliably and improved operations through the delivery of well-built and tested solutions. Possesses strong hands-on development skills, has worked in collaborative in **Agile** teams that used a variety of technologies, most notably C#, JavaScript, SQL and Graph databases. Delivered numerous reliable solutions developed from scratch, that covered all aspects of design from back-end to front-end using best-practices always.

Possesses resourceful and approachable leadership skills combined with strong collaborative abilities, which have helped to create motivated and high performing teams. Effective stakeholder management skills as well as the ability to convey technical concepts to business teams, have ensured business buy-in to proposed solutions and smooth delivery of projects. Received consistent feedback for being a valued team member due to having a "can-do" attitude, keen eye for detail as well as the ability to see the big picture form both technical and commercial perspective.

TECHNICAL SKILLS SUMMARY

Languages: C#, JavaScript, TypeScript, HTML, CSS, Delphi, Visual Basic, JSON, XML, VBA, PowerShell, T-SQL, Cypher.

Software Practices: Unit Testing, Agile Development, VSTFS, Git, SOLID principles, Object-Orientated Design.