Challenge Appendix 1: Challenge Brief (Part A and Part B)

1. Challenge Brief A

Module Title:	Developing Data Projects	**Module Code:**	DT402
Challenge Title:	Software Development Portfolio		
Challenge Type:	As a digital technology solutions data professional, you are embarking on a journey to develop your skills in data project development. Throughout the module, you will engage in weekly module challenge tasks that involve applying theoretical knowledge within the context of your workplace, completing short coding exercises and ultimately undertaking the main module challenge which is to create a data dashboard using Python, HTML, JavaScript and CSS. By the end of this module challenge you will have developed your software development portfolio. **Weekly Challenges:** Each week, you will be presented with specific tasks and questions to reinforce your learning and practical capabilities. These challenges will encourage you to consider the course material in the context of your workplace, allowing you to connect theory with real-world scenarios. Aim to complete these tasks regularly as they will enhance your understanding and help consolidate your learning. **Short Coding Challenges:** In addition to the theoretical aspects of the module, you will also encounter short coding challenges designed to strengthen your programming skills. These coding exercises will be instrumental in preparing you for the module challenge tasks in weeks 5 & 6, where you will create a data dashboard using Python, HTML, JavaScript, and CSS. Make sure to diligently work through these coding challenges as they will build your coding proficiency. **Data Dashboard:** In weeks 5 & 6, you will apply your knowledge and skills to develop a data dashboard. This dashboard will be designed to display and analyse relevant data within a workplace context. Your data dashboard project will involve integrating Python, HTML, JavaScript and CSS to create a user friendly and visually appealing dashboard.		

	Professional Development Expert (PDE) Support: Throughout this module challenge, your Professional Development Expert (PDE) will provide you with valuable support and guidance. They will assist you in staying on track with your weekly tasks and coding challenges, offering advice and clarification whenever necessary. Make the most of your interactions with your PDE to ensure you are progressing effectively. **Compilation and Revision:** At the start of week 8, you will receive a compiled version of all your weekly challenges submitted to APTEM. You will have one week to refine and finalise your module challenge responses before the submission of your software development portfolio for module challenge A. Use this time to add further insights, polish your work and include any additional outputs from your coding exercises. **Submission Requirements:** By the end of week 8, ensure your final, polished data dashboard project is ready for submission. The deadline for submission is the start of week 9. It is essential to understand and adhere to the specified submission requirements, which will be outlined in detail in the module challenge brief. The goal of this module challenge is not just evaluation and assessment, but to facilitate the application of your learning in a practical workplace context. By engaging in weekly challenges, coding exercises and the module challenges, you will acquire hands-on experience that contributes to both your professional growth and a deeper understanding of software development.
Assessment Opportunity	*This assessment is the* first *opportunity to demonstrate attainment of the learning outcomes.*
Assessment Weighting:	70%
Additional Specific Requirements:	• Weekly challenge tasks should be submitted to APTEM. • Code should be submitted to GitHub, with valid URLs linking to the repositories. • Final portfolio should be submitted in PDF format with links to GitHub repositories / Pages. • Wordcount 2000

	File naming: name-module code and assignment part A. (e.g**., Smith-DT402A**).
Submission Method:	Turnitin
Submission Instructions:	1. To submit your assignment, go to Calendar in Full Fabric. 2. In Calendar, choose this module from the course filter column. 3. Go to the "**Assignments**" tab, click on the icon (>) on PART B. 4. Go to the "**Submissions**" tab, to launch the Turnitin assignment dashboard. 5. Click "**Upload Submission**" to open the "Submit File" window. Select "Upload Submission" to upload a file directly to Turnitin. 6. Select the Choose file button or drag your file directly onto the modal. 7. Title your submission: NAME- module code and assignment part A or B (e.g., Smith – DT402A). 8. Click **Upload and Review**. Before you submit you will have an opportunity to check that the file you are about to submit is correct. Please preview your file before submitting. 9. Once you have competed the 3 steps on the "Submit file" window, choose " **Submit to Turnitin**". 10. **Complete submission**. Once your file is successfully submitted you will see a submission complete notice. Please do not leave the submissions. window until you have seen this notice.
Submission Deadline:	**15:00 Hrs Monday 10 February 2025**

Learning outcomes Assessed	**Pass assessment Criteria**
Place each LO on a separate row line and the ones below	*Place the corresponding UAC criteria for a pass (satisfactory) here.*
MLO 1: Explain a range of software development techniques within a business context	**Discipline Skills and Knowledge:** Explain and apply a range of discipline-specific theories, concepts and skills, for business contexts.
MLO 3: Explain and apply digital tools to develop software artefacts, identifying and solving problems	**Creative Problem-Solving:** Explain and apply problem solving tools and techniques to address basic problems. **Digital proficiency:** Explain and apply digital tools to solve basic problems and support communication
MLO 4: Explain common vulnerabilities and risks of unsecure code	**Digital proficiency:** Explain and apply digital tools to solve basic problems and support communication **. Professionalism**

	Demonstrate a basic understanding of professional and ethical working practices, acting in the best interest of the organisation.
Assessment info:	To understand what you need to do to achieve more than a pass, you can see the full assessment criteria below in the assessment rubric. For help understanding your assessment, please contact your PDE.

Academic Integrity:

You must as a minimum ensure work submitted is your own original work and:

- Ensure you acknowledge the ideas (this applies to material quotes from text and where you paraphrase the views/work) of others.
- Acknowledge copyright where appropriate.
- Use Harvard formatting for references
- Ensure you are familiar with the Academic Integrity Policy
- Not submit anything you have previously submitted for assessment **unless it is specifically permitted to as part of the challenge brief or covered by the rework regulations.**

2. Challenge Brief B

Module Title:	Developing Data Projects	**Module Code:**	DT402
Challenge Title:	Software Development Techniques Report		
Challenge Type:	For module challenge B, you are asked to write a 1000-word report detailing the processes undertaken to create your data dashboard in module challenge A. Explaining software development techniques in a business context, addressing common vulnerabilities, the risks of unsecure code and the importance of version control in the development process. Consider the following structure as a guide: • **Introduction: 50 words** • **Software Development Techniques (Approx. 200 words):** Describe requirements, design methodologies, coding practices and testing procedures. • **Data Dashboard Development Process (Approx. 400 words):** Explain how the data dashboard was created using Python, HTML, JavaScript and CSS. Discuss design choices, workplace alignment, Deployment and innovative approaches used. • **Common Vulnerabilities and Risks of Unsecure Code (Approx. 300 words):** Consider potential weaknesses such as SQL injection, XSS and insecure data storage. Explain how to mitigate them through secure coding practices. • **Conclusion (Approx. 50 words):** Summarise key learnings from the data dashboard creation, the significance of version control, and the importance of secure coding in a business context. Organise the report effectively with clear explanations and relevant examples. Remember to reference external sources where necessary and acknowledge best practices used.		
Assessment Opportunity	*This assessment is the first opportunity to demonstrate attainment of the learning outcomes.*		
Assessment Weighting:	30%		

Additional Specific Requirements:	• PDF File Format • Document should be title 'DT402_MCB_FirstName_Surname.pdf • 1000 words
Submission Method:	Turnitin
Submission Instructions:	1. To submit your assignment, go to Calendar in Full Fabric. 2. In Calendar, choose this module from the course filter column. 3. Go to the "**Assignments**" tab, click on the icon (>) on PART B. 4. Go to the "**Submissions**" tab, to launch the Turnitin assignment dashboard. 5. Click "**Upload Submission**" to open the "Submit File" window. Select "Upload Submission" to upload a file directly to Turnitin. 6. Select the Choose file button or drag your file directly onto the modal. 7. Title your submission: NAME- module code and assignment part A or B (e.g., Smith – DT402B). 8. Click **Upload and Review**. Before you submit you will have an opportunity to check that the file you are about to submit is correct. Please preview your file before submitting. 9. Once you have competed the 3 steps on the "Submit file" window, choose " **Submit to Turnitin**". 10. **Complete submission**. Once your file is successfully submitted you will see a submission complete notice. Please do not leave the submissions. window until you have seen this notice.
Submission Deadline:	**15:00 Hrs Monday*** **

Learning outcomes Assessed	**Pass assessment Criteria**
Place each LO on a separate row line and the ones below	*Place the corresponding UAC criteria for a pass (satisfactory) here.*
MLO 2: Critically reflect upon business and technical requirements to present a basic technology solution	**Critical Thinking:** Critically reflect upon issues, concepts, theories and perspectives relevant to the subject, developing a basic argument;
MLO 4: Explain common vulnerabilities and risks of unsecure code	**Digital proficiency:** Explain and apply digital tools to solve basic problems and support communication **.** **Professionalism** Demonstrate a basic understanding of professional and ethical working practices, acting in the best interest of the organisation.

Assessment info:	To understand what you need to do to achieve more than a pass, you can see the full assessment criteria below in the assessment rubric. For help understanding your assessment, please contact your PDE.

Academic Integrity:

You must as a minimum ensure work submitted is your own original work and:

- Ensure you acknowledge the ideas (this applies to material quotes from text and where you paraphrase the views/work) of others.
- Acknowledge copyright where appropriate.
- Use Harvard formatting for references
- Ensure you are familiar with the Academic Integrity Policy
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Appendix 2 Assessment Rubric

Part A Software Development Portfolio

LO/Attainment	Fail (0-31%)	Insufficient (32%-39%)	Satisfactory (40%-49%)	Good (50% - 59%)	Very Good (60%-69%)	Excellent (70%-85%)	Outstanding (>85%)
Creative Problem Solving: Explain and apply problem solving tools and techniques to address basic problems	The work is of a superficial nature and does not address the challenge brief, the learning outcomes, or both. A mark of 0 will be awarded for a non-submission or where has been disregarded for academic misconduct.	Limited evidence of ability to apply methods appropriately to address a problem.	Applies methods to address a problem and some evidence of the complexity of the issues in the discipline.	Applies methods accurately to address a well-defined problem, appreciating the complexity of the issues.	Applies methods accurately to address a well-defined problem, examining the complexity of the issues	Applies methods accurately and very effectively to address a well-defined problem, appreciating the complexity of the issues.	Applies methods accurately and highly effectively to address a well-defined problem, appreciating the complexity of a range of issues.
Digital proficiency: Explain and apply digital tools to solve basic problems and support communication		Very limited evidence of ability to identify digital tools and methods and apply appropriately	Some digital method/tools identified and evidence of appropriate use in solving basic problems	Digital method/tools identified and applied, with some appreciation of the complexity of problems/communication	Digital method/tools identified and applied appreciating and examining the complexity of the problems/communication.	Digital method/tools identified and applied very effectively appreciating the complexity of problems/communication	Digital method/tools identified and applied accurately and highly effectively appreciating the complexity of a range problem/communication issues.
Professionalism: Demonstrate a basic understanding of professional and ethical working practices, acting in the best interest of the organisation		Descriptive generalised statements made with scant evidence/references.	Some understanding of professional practices/issues and some evidence/references to support views, but not always consistent.	Understanding of professional practices/issues. An emerging awareness of ethical decision making .	Understanding of professional practices/issues clearly identified within given areas. Awareness of the complexities of ethical decision making supported by evidence	Excellent understanding of professional practices/issues with an appreciation of the complexities of ethical decision making supported by a range of evidence.	Logical, articulate understanding of professional practices/issues with a strong appreciation of the complexities of ethical decision making supported by a range of evidence..
Discipline Skills and Knowledge: Explain and apply a range of discipline-specific theories, concepts and skills, for business contexts		Gaps in knowledge and superficial understanding of core knowledge and skills. Some inaccuracies.	Broadly accurate knowledge and understanding of the core knowledge and skills. Some elements missing and flaws evident	Sound, routine knowledge and understanding of the core knowledge and skills, main concepts and key theories. Some flaws may be evident.	Consistent knowledge and understanding of the core knowledge and skills, examination of main concepts and key theories at this level.	Detailed knowledge and understanding of the main concepts/ theories at this level. Awareness of multiple perspectives in of theory in the knowledge base.	Highly detailed knowledge and understanding of material, concepts and theories for this level of study. Awareness of the ambiguities and limitations of knowledge.

Part B Software Development Techniques Report

LO/Attainment	Fail (0-31%)	Insufficient (32%-39%)	Satisfactory (40%-49%)	Good (50% - 59%)	Very Good (60%-69%)	Excellent (70%-85%)	Outstanding (>85%)
Critical Thinking: Critically reflect upon issues, concepts, theories and perspectives relevant to the subject, developing a basic argument	The work is of a superficial nature and does not address the challenge brief, the learning outcomes, or both. A mark of 0 will be awarded for a non-submission or where has been disregarded for academic misconduct.	Descriptive, sometimes illogical or contradictory. Generalisations/ statements made with scant evidence/references. Conclusions lack relevance validity.	Some awareness of issues. Sense of argument emerging though not completely coherent. Some evidence/references to support views, but not always consistent. Some relevant conclusions	Issues identified within given areas. An emerging awareness of different stances and ability to use evidence/references to support a coherent argument. Broadly valid conclusions	Strong analytical ability. Acknowledgment of views of others. Arguments generally logical, coherently expressed, well organised and supported. Sound conclusions.	Excellent analysis. Perceptive and persuasive points made within given area. Explicit acknowledgment of other stances. Arguments well-articulated and logically developed with a range of evidence/references. Strong conclusions	Logical, articulate analysis a consistent feature. Persuasive points made throughout the work within a highly articulate, balanced argument. Judiciously selected evidence/references, drawn from relevant research. Convincing conclusions.
Digital proficiency: Explain and apply digital tools to solve basic problems and support communication		Very limited evidence of ability to identify digital tools and methods and apply appropriately	Some digital method/tools identified and evidence of appropriate use in solving basic problems	Digital method/tools identified and applied, with some appreciation of the complexity of problems/communication	Digital method/tools identified and applied appreciating and examining the complexity of the problems/communication.	Digital method/tools identified and applied very effectively appreciating the complexity of problems/communication	Digital method/tools identified and applied accurately and highly effectively appreciating the complexity of a range problem/communication issues.
Professionalism: Demonstrate a basic understanding of professional and ethical working practices, acting in the best interest of the organisation		Descriptive generalised statements made with scant evidence/references.	Some understanding of professional practices/issues and some evidence/references to support views, but not always consistent.	Understanding of professional practices/issues. An emerging awareness of ethical decision making .	Understanding of professional practices/issues clearly identified within given areas. Awareness of the complexities of ethical decision making supported by evidence	Excellent understanding of professional practices/issues with an appreciation of the complexities of ethical decision making supported by a range of evidence.	Logical, articulate understanding of professional practices/issues with a strong appreciation of the complexities of ethical decision making supported by a range of evidence..