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Description automatically generated

**BCS Level 5**

**Data Engineer Apprenticeship**

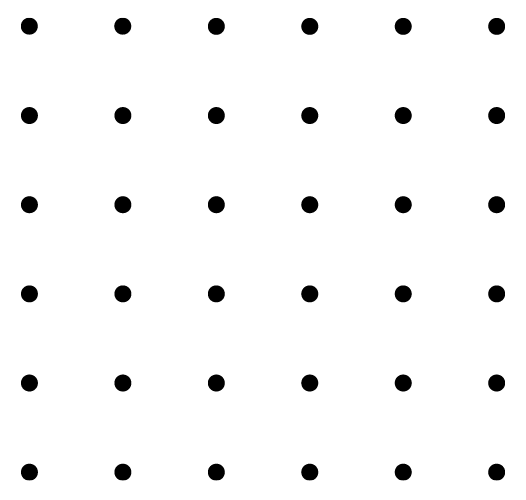
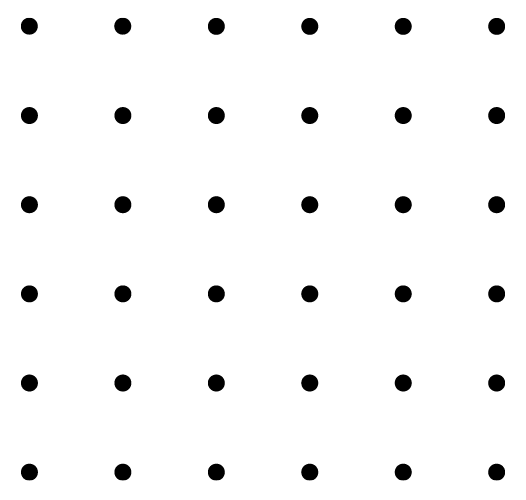
Assessment Method 1

Project Evaluation Report, Presentation and Questions

Work-Based Project Sign-Off Document

**February 2024**

**IfATE Standard V1.0**



## Change History

Changes made to this document are recorded below. This includes the latest version number, date of the amendment, and details of the change. The purpose is to identify the updates undertaken.

|  |  |
| --- | --- |
| **Version Number & Date** | **Changes Made** |
| V1.0 | Document created. |
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## Overview

This mapping document is to help facilitate the timely sign-off for the intended work-based project for assessment method 1.

The apprentice should complete the following project mapping to clearly explain how the proposed work-based project will meet all the assessment criteria allocated to this assessment method.

The apprentice must start the project before the gateway. The project evaluation report must be completed after the gateway. The employer should ensure the apprentice has the time and resources to plan and complete their project. The project will form the basis of the presentation and the subsequent questions and answers with the independent assessor.

The end-point assessment organisation (EPAO) will review the mapping document and sign it off. In the case that more detail is needed, the EPAO will provide feedback to request further information.

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| **Top Tip** |
| * Please take the time to fully read and understand the assessment plan for this assessment method. |

We strongly recommend that the mapping document is completed and used. Failure to do so will likely cause delays in the EPAO being able to sign off the proposed work-based project.

**Please do NOT save this as a pdf as it needs to be annotated by the EPAO.**

**Add your full name to the start of the filename prior to submission.**

## Assessment method 1: Project evaluation report, presentation and questions

**Apprentice Details**

|  |  |
| --- | --- |
| **Name** |  |
| **ULN** |  |
| **Training Provider** |  |
| **Employer** |  |

## Project title

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| --- |
| Enter your project title here. |

## Project brief

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# Project checklist table

The purpose of this table is to cross-check that the project work completed by the apprentice meets the grading criteria and KSBs required by this assessment method.

Write a short and clear explanation in the ‘Project mapping’ column about how each assessment criterion below will be met through the proposed project report and presentation. The EPAO will then review your document.

Please note, performing a skill does not demonstrate that you have the required knowledge and understanding; it is therefore essential that you provide justification for your actions and choices and clearly explain the thinking behind these.

“OK” only signifies that your proposal has the potential to meet the mapped criteria. Remember, where you have selected a tool or technique, justify **why** it has been chosen.

## Pass and distinction criteria

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| --- | --- | --- |
| **Data product design** | | |
| **Pass grading descriptors** | **Project mapping** | **EPAO feedback** |
| Demonstrates how they have collated, evaluated and refined user requirements to design and build a scalable data product that serves multiple needs and complies with regulatory requirements. (K9, S1, S3) |  |  |
| Explains how they collated, evaluated and refined business requirements, to design, build and maintain a system whilst ensuring that organisational strategies for sustainable, net-zero technologies are considered. (K12, S2) |  |  |
| Explains how they selected sustainable solutions in relation to data products and environmental social governance to ensure the use of less carbon across the various stages of product and service delivery. (K7, S27) |  |  |
| Demonstrates how they used security, scalability and governance when automating data pipelines using programming languages and data integration platforms with graphical user interfaces. (K13, S4) |  |  |
| Demonstrates how they produced and maintained technical documentation for a data product in order to meet organisational user requirements, whilst adapting to changing work priorities to ensure that deadlines are met. (S5, B1) |  |  |
| Explains how debugging, version control and testing have an impact on software development and the principles for data products. (K6) |  |  |
| Outlines the uses of different on-demand cloud computing platforms. (K14) |  |  |
| **Distinction grading descriptors** | | |
| Justifies how the data product created met the requirements and served multiple needs. (S1, S3) |  | Mapping noted but no feedback given on distinction criteria. |
| **Underpinning assessment criteria** | | |
| K6: Software development principles for data products, including debugging, version control, and testing.  K7: Principles of sustainable data products and organisational responsibilities for environmental social governance.  K9: How to build a data product that complies with regulatory requirements.  K12: How to cost and build a system whilst ensuring that organisational strategies for sustainable, net zero technologies are considered.  K13: The implications of financial, strategic and compliance regarding to security, scalability, compliance and cost of local, remote or distributed solutions.  K14: The uses of on-demand Cloud computing platform(s) in a public or private environment such as Amazon AWS, Google Cloud, Hadoop, IBM Cloud, Salesforce and Microsoft Azure.  S1: Collate, evaluate and refine user requirements to design the data product.  S2: Collate, evaluate and refine business requirements including cost, resourcing, and accessibility to design the data product.  S3: Design a data product to serve multiple needs and with scalability, efficiency, and security in mind.  S4: Automate data pipelines such as batch, real-time, on demand and other processes using either programming languages and data integration platforms with graphical user interfaces.  S5: Produce and maintain technical documentation explaining the data product, that meets organisational, technical and non-technical user requirements, retaining critical information. S27: Selects and apply sustainable solutions to contribute to net zero and environmental strategies across the various stages of product and service delivery. B1: Acts proactively and takes accountability adapting positively to changing work priorities, ensuring deadlines are met. | | |

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| **Data product deployment and evaluation** | | |
| **Pass grading descriptors** | **Project mapping** | **EPAO feedback** |
| Explains the deployment approaches processes for new data pipelines and automated processes. (K8) |  |  |
| Explains techniques such as star schemas, data lakes and data marts and the impact they have on data warehousing principles. (K15) |  |  |
| Demonstrate how to systematically clean, validate and describe data at all stages of extract, transform and load, showing how combining disparate data sources and taking different approaches to data integration delivers value to an organisation. (K17, S6) |  |  |
| Describes the types and uses of data engineering tools in their own organisation and how they apply them. (K20) |  |  |
| Evaluates the strengths and weaknesses of prototype data products to integrate within an organisation’s overarching data structure, taking into consideration the lifecycle of implementing data solutions in a business. (K24, K25, S24) |  |  |
| Describes the approved organisational architectures and the relevant data development frameworks. (K26) |  |  |
| Identifies data quality metrics and their frameworks and tracks them to ensure quality, accuracy and reliability of the data product. (K4, S26) |  |  |
| Demonstrates the use of tools and programming to query and manipulate data and implement automated validation checks, showing the methodologies used for moving data from one system to another for storage and handling. (K2, S9) |  |  |
| Explains how they have worked with structured, semi-structured and unstructured data, developing algorithms to extract from sources. (K19, S16) |  |  |
| **Distinction grading descriptors** | | |
| Evaluates the success of the algorithm developed. (S16) |  | Mapping noted but no feedback given on distinction criteria. |
| **Underpinning assessment criteria** | | |
| K2: Methodologies for moving data from one system to another for storage and further handling.  K4: Frameworks for data quality, covering dimensions such as accuracy, completeness, consistency, timeliness, and accessibility.  K8: Deployment approaches for new data pipelines and automated processes.  K15: Data warehousing principles, including techniques such as star schemas, data lakes, and data marts.  K17: Approaches to data integration and how combining disparate data sources delivers value to an organisation.  K19: Differences between structured, semi-structured, and unstructured data.  K20: Types and uses of data engineering tools and applications in own organisation.  K24: Processes for evaluating prototypes and taking them to implementation within a production environment.  K25: The lifecycle of implementing data solutions in a business, from scoping, though prototyping, development, production, and continuous improvement.  K26: Data development frameworks and approved organisational architectures.  S6: Systematically clean, validate, and describe data at all stages of extract, transform, load (ETL).  S9: Query and manipulate data using tools and programming such as SQL and Python. Manage database access, and implement automated validation checks.  S16: Develop algorithms and processes to extract structured data from unstructured sources.  S24: Evaluate the strengths and weaknesses of prototype data products and how these integrate within an organisation’s overarching data infrastructure.  S26: Identify data quality metrics and track them to ensure the quality, accuracy and reliability of the data product. | | |

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| **Collaborative working** | | |
| **Pass grading descriptors** | **Project mapping** | **EPAO feedback** |
| Outlines the methods and techniques used to communicate messages about the data product that meet the needs of the audience. (K30, S23) |  |  |
| Explains how they worked collaboratively with different stakeholders to develop and maintain working relationships. (S22, B2) |  |  |
| **Distinction grading descriptors** | | |
| Evaluate the impact of the methods and techniques used to communicate messages about the data product to the audience. (K30, S23) |  | Mapping noted but no feedback given on distinction criteria. |
| **Underpinning assessment criteria** | | |
| K30: The methods and techniques used to communicate messages to meet the needs of the audience.  S22: Develop, maintain collaborative relationships using adaptive business methodology with stakeholders such as, business users, data scientists, data analysts and business intelligence teams.  S23: Present, communicate, and disseminate messages about the data product, tailoring the message and medium to the needs of the audience.  B2: Works collaboratively with stakeholders and colleagues, developing strong working relationships to achieve common goals. Support an inclusive culture and treat technical and non-technical colleagues and stakeholders with respect. | | |