Abdul Mobarak DevOps AM2 Portfolio of Evidence

Name: Abdul Mobarak

Company: Department for Work and Pensions

Training Provider: Makers Academy

# Instructions

* Download and save to your own area to make this an editable document
* For each of the assessment themes below, read and make sure you understand the bullet points and KSB’s before adding any of your evidence
* You may then provide evidence for each of these within the boxes below (using the STAR based method and Screenshots where applicable).
* Make use of the hints and tips as well as the key words and phrases that have been underlined.
* Each stage (0-3) requires you to cover at least 2 criteria section from the list below\*
* \*For each criteria to be considered complete, you must make sure you have covered ALL of the KSB’s listed underneath it, make sure you are confident you have provided evidence for each of the KSB’s

# Projects Worked On

Please list the projects you have worked on with a brief overview

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| **Name of project** | **Overview of project** |
| StarTeam User Audit Tool | The purpose of this project is to develop tools to review StarTeam users to effectively manage all users, removing redundant users and updating existing users with correct details. This is crucial to maintain secure access control and ensure that future migration possibilities can be considered and implemented with ease. Other benefits include developing and improving my Python and Unix skills, team work and collaboration, and a better understanding of how DWP Digital teams operate. |
| Definitive Media Library (DML) | During my apprenticeship, I was tasked with the development of a Definitive Media Library (DML) project as part of my current teams deliverables with the support of other teams such as Site Reliability Engineers (SRE). This project aimed to create a centralised repository for managing software assets within DWP. This initiative involved collaborating with various internal and external stakeholders and adhering to agile methodologies.  My primary responsibilities included supporting efforts of the team, engaging in technical collaboration, facilitating knowledge sharing, and ensuring the success of the DML project. I also was tasked with researching different options as this was designed to be a proof of concept. |
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# Brief Introduction

Let us know about your company in a brief introduction to you, your company, and the team/s you work in

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| About Me My name is Abdul Mobarak, and I am very fortunate to be part of DWP’s DevOps Engineer Apprenticeship scheme, which is delivered by Makers. I chose to apply and become a DevOps Engineer because I enjoy problem solving, creative solutions and engineering. I studied Graphic Design at University and enjoy gaming and DIY. I believe that becoming a DevOps Engineer will allow me to bring out the best of my skills and help me grow as an individual, as well as build an enjoyable career which I hope will help me to provide value to DWP. About My Team Diagram, table  Description automatically generatedMy team’s name is the Software Release Team. My team is part of DWP’s Digital Group and sits under Hybrid Cloud Services which is part of Technology Services as per the below Organisation Chart.  3.2 1 Team Structure  My team’s purpose is to provide DWP with efficient, secure and repeatable tools and/or assistance for transferring software and packages from repositories and vendors into the operation estate. This is achieved by providing both process and tooling support. Some of my team’s other activities include:   * Taking formal receipt of third-party software deliverables from suppliers * Tool administration e.g., Micro Focus StarTeam and some file transfer services * Supporting Labour Market System (doing software builds etc.) and Personal Independence Payments (branching and merging etc.)  Normal Working Day A normal working day in my role consists of working on tickets, taking up learning, and daily stand-up meetings with my team. My team stand-up meetings are usually 11am every day which is perfect for discussing work and issues. On Monday to Thursday, I work on tickets and complete outstanding tasks including learning courses, consulting with my manager when necessary as he kindly provides me great support. I also have weekly 1-2-1 meetings with my manager. On Fridays I have my dedicated time to complete apprenticeship activities. Responsibilities and Obligations In my role I am required to abide by rules and regulations set by DWP and the wider government. These include my obligations to Health and Safety, General Data Protection Regulation (GDPR), etc. To ensure I am aware of my responsibilities I am required to complete mandatory training every year or two, to ensure my understanding is kept up to date. As my role may involve building capabilities and components that affect services in DWP internally and externally, it is crucial that I abide by and follow guidelines, therefore this training is invaluable to the work I do now and in the future. My role also requires for me to practice DWP values which are the following: We care, we deliver, we adapt, we work together, and we value everybody. In short, ensuring I am inclusive of all people, and ideas, ensuring that I deliver my expectations and help others is crucial.  NOTE: Previous advice from assessor on Submission Zero was “With this section add GDPR and relevant H&S examples” but unfortunately, I am unclear how to provide examples? Working Environment My role consists of hybrid working, from home and the office. I am based in Manchester and my office is just a few miles away from home. However, my team is based in Newcastle, this means that a digital communications approach is vital to keep in touch and up to date. We use Slack and Microsoft Teams mainly for communication. |

# Evidence List – Knowledge Skills and Behaviours (KSB’s)

This section is to demonstrate how I have met the KSB’s within different tickets.

## Knowledge List

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| Item | Description | Comments |
| K3 | K3 - How to use data ethically and the implications for wider society, with respect to the use of data, automation, and artificial intelligence within the context of relevant data protection policy and legislation. | Feedback received – resubmitted |
| K6 | K6 - A range of problem-solving techniques appropriate to the task at hand, such as affinity mapping, impact maps, plan-do-check-act/Deming. | Feedback – acceptably met |
| K9 | K9 - Different organisational cultures, the development frameworks utilised and how they can both **complement** each other and introduce **constraints** on delivery. | New Work To be Reviewed by Assessor |
| K18 | K18 - Roles within a multidisciplinary team and the **interfaces with other areas of an organisation**. | 3 teams involved in DML  HCS Software Release  SRE  CI/CD Squad  NOTE: Not fully complete yet |
| K19 | K19 - Different methods of communication and choosing the appropriate one - e.g., face-to-face (synchronous, high bandwidth), instant messaging, email (asynchronous, low bandwidth), visualisations vs. words. | Feedback – acceptably met |
| K20 | K20 – Pair/mob programming techniques and **when to use** each technique. | Feedback received – resubmitted |
| K22 | K22 - How their occupation fits into the wider digital landscape and any current or future regulatory requirements. | Feedback – acceptably met |
| K23 | K23 - The importance of **continual** improvement within a blameless culture. | Feedback – acceptably met |
| K24 | K24 - The difference between Software-as-a-Service (SaaS) v bespoke v enterprise tooling and how to make an informed choice that suits each use case. | Feedback received – resubmitted |
| K25 | K25 – Maintain **an awareness** of cloud certification requirements. | Feedback – acceptably met |
| 9 out of 10 Knowledge KSB’s Claimed | | |

Table 0.1 – Table of Knowledge Criteria

## Skills

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| Item | Description | Comments |
| S1 | S1 – Communicate credibly with **technical** and **non-technical people** at all levels, **using a range of methods**; e.g., ‘Show and Tell’ and ‘Demonstrations’. | Apprenticeship Meetings  Introduction to Sheep Dip  How do you tailor communication for technical and non-technical people?  NOTE: Not fully complete yet |
| S2 | S2 - Work within different organisational cultures with **both internal** and **external parties.** | New Work To be Reviewed by Assessor |
| S4 | S4 – **Initiate** and **facilitate** knowledge sharing and technical collaboration. | Create a terraform project and/or repo to upskill colleagues on terraform/aws - consider what resources and access requirements necessary first  NOTE: Not fully complete yet |
| S8 | S8 - Work in agile, multi-disciplinary delivery teams, taking a flexible, collaborative and pragmatic approach to delivering tasks. | New Work To be Reviewed by Assessor |
| S13 | S13 – Engage in productive pair/mob programming. | New Work To be Reviewed by Assessor |
| S16 | S16 – Invest in **continuous learning**, both your own development **and others**, ensuring learning activities dovetail with changing job requirements. Keep up with cutting edge. | New Work To be Reviewed by Assessor |
| S21 | S21 - Application of lightweight modelling techniques, such as whiteboarding**, in order to gain consensus** as a team on evolving architecture. | New Work To be Reviewed by Assessor |
| 5 out of 7 Skills KSB’s Claimed | | |

Table 0.2 - Table of Skills Criteria

## Behaviours

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| Item | Description | Comments |
| B1 | B1 - Exhibits enthusiasm, openness and an aptitude for working as part of a collaborative community; e.g., sharing best practice, pairing with team members, learning from others and engaging in peer review practices. | Apprenticeship Meetings  NOTE: Not fully complete yet |
| B2 | B2 – Invests time and effort in their own development, recognising that technology evolves at a rapid rate. | New Work To be Reviewed by Assessor |
| B4 | B4 - Is inclusive, professional and maintains a blameless culture. | New Work To be Reviewed by Assessor |
| 2 out of 3 Behaviour KSB’s Claimed | | |

Table 0.3 - Table of Behaviour Criteria

# Assessor Feedback

For the grading criteria the statements that fit the evidence supplied will be highlighted (White is not met, Green is acceptably met and yellow is partially met)

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| Assessment Theme 1. Organisational Culture | |
| Pass criteria | Distinction Criteria |
| · Explains how an organisation's culture can both provide creative freedom and introduce constraints.  · Explains the connection between culture and the organisation’s potential for continuous improvement with both internal and external parties. | · Explains the mindsets that underpin organisational culture - e.g. outcome versus activity driven, collaboration versus silos, accountability, trust and empowerment and their impact on the organisation.  · Assesses the difference between risk avoidance and risk acceptance and how these link to culture. |
| K9 - Different organisational cultures, the development frameworks utilised and how they can both **complement** each other and introduce **constraints** on delivery.K23 - The importance of **continual** improvement within a blameless culture.S2 - Work within different organisational cultures with **both internal** and **external parties.** | |
| **Assessor Feedback:** | |
| **Hints & Tips:** Examples of working within different teams and the differences that the apprentice may have experience in; 1. Methodology (Agile) 2. Tools and tech 3. Mindsets (outcome driven, collaboration, silo etc…) \*External parties here could be outside their usual team and not necessarily outside the organisation. | |
| **Evidence:** K9 - Different organisational cultures, the development frameworks utilised and how they can both **complement** each other and introduce **constraints** on delivery. In DWP Digital and the IT industry, I'm aware that different organisations sometimes adopt different approaches to development, such as Waterfall, Agile, or DevOps. Waterfall involves meticulous planning, Agile emphasises on collaboration, and DevOps centres around teamwork and continuous integration/continuous delivery (CI/CD).  I've noted that when we have a culture focused on teamwork and embrace DevOps principles, it allows us to align with the Agile methodology. This culture prioritises collaboration, openness, and ongoing improvement, which resonates with the teamwork and continuous improvement aspects of Agile and DevOps. This enhances communication, accelerates feedback loops, and promotes swift and reliable delivery.  In companies that stick to traditional ways and have a top-down structure, it can be tough to introduce Agile or DevOps methods. The setup with clear levels of authority might make it hard to be flexible, make decisions independently, and collaborate across different departments. Following strict procedures and waiting for approvals could slow things down, going against the quick and flexible goals of Agile and DevOps. I know that changing this requires a cultural shift and getting everyone on board.  To tackle these issues, I see the importance of building a culture based on open communication, trust, and always getting better. It's crucial to promote teamwork, break down barriers between departments, and give people the power to decide and take charge of their work. My goal is to create a culture that emphasises working together, using automation, and always finding ways to improve. At the same time, I try to understand and fit into the existing company culture. By making communication smoother, breaking down obstacles, and adjusting our development methods to fit the company, I aim to make our processes better and achieve successful results in the dynamic world of DevOps. K23 - The importance of **continual** improvement within a blameless culture. As a DevOps engineer, I understand the significance of continual improvement within a blameless culture. In DevOps, I value learning from failures and using them as opportunities for growth and improvement. A blameless culture nurtures an environment where individuals are not punished for mistakes, but instead, I am encouraged to learn from them and collaborate on finding solutions to continually deliver and improve.  Continual improvement is important and essential for me as a DevOps Engineer and DWP Digital. It helps refine our processes, increase efficiency, deliver high quality services, software, and reduce costs. To continually improve, assessing projects, identifying key areas of improvement, and implementing changes is crucial. Doing so iteratively can ensure that continual improvement is engrained in my work.  A blameless culture helps adopt a positive mindset, empowering others to take risks, experiment and innovate. Avoiding the blame game is important to allow others to share ideas, insights, and experience. This fosters a collaborative and supportive environment, facilitating knowledge sharing and continuous improvement.  Ultimately, adopting both continuous improvement and a blameless culture will allow for innovation and excellence. More importantly, being positive will help engage others, and help myself, and the organisation to move forwards with growth and success. S2 - work within different organisational cultures with **both internal** and **external parties.** **Situation:**  Our team began the DML (Digital Media Library) project, moving from On-Premise Hosting to the cloud in line with DWP Digital's goal of becoming a Cloud-First organisation.  **Task:**  As part of a team of three, I participated in leading the move of our media library from StarTeam to a more cost-effective, cloud-based solution to enhance the user experience. Doing so required collaborating with other departments and fostering different cultures.  **Actions:**  Given my teams primary responsibility of delivering packages into secure live environments through the Sheep Dip interim process, a key initiative was to automate and transition this process into the cloud. To achieve this, I collaborated closely with the Site Reliability Engineering (SRE) Team, breaking down traditional silos and embracing Agile methodologies. My active participation in weekly meetings for the DML project, comprised of planning, brainstorming, and problem-solving sessions, facilitated a dynamic collaboration with the SRE Team.  The SRE Team's expertise in cloud technologies was instrumental in providing us with a foundational understanding and a head start in the cloud space. This collaboration enabled me, alongside my manager and a colleague, to explore and test various solutions for the DML project. By exploring our organisation's culture, I was able to balance creative freedom within constraints, adapting agile methodologies and tools. Using the SRE Team's expertise to understand and start working in the cloud, I conducted trials of various cloud solutions with my manager and a colleague, learning from the SRE Team's insights.  **Results:**  By working with the SRE team, I was able to adopt cloud technologies quicker, create proof-of-concepts sooner, and successfully break down silos for effective collaboration. This experience showcased not only my technical skills but also my ability to contribute effectively in a culture valuing both innovation and structured methodologies.    **Evidence:** | |
| **A screenshot of a chat  Description automatically generated**  S2 1 -Collaboration with SRE via Slack  **A screenshot of a computer  Description automatically generated**  S2 2 - Collaboration with SRE Weekly Teams Meetings | |

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| Assessment Theme 2. Data Ethics | |
| Pass Criteria | Distinction Criteria |
| · Identifies relevant data protection legislation and assesses its impact on the ethical use of customer data, as well as its relevance to emerging technologies, such as Artificial Intelligence and Machine Learning. |  |
| K3 - How to use **data ethically** and the implications for wider society, with respect to the use of data, automation, and artificial intelligence within the context of relevant **data protection policy and legislation**. | |
| **Assessor Feedback:**  ACTION – As requested above the best way here is to mention the type of data that your company has access to and the nature of it. After this mention the security protocols that your company takes along with how it complies with both the data protection act and GDPR. | |
| **Hints & Tips:** Identifying the legislation. Examples of how you have complied with it and how it may have affected you at work.  Additionally, you can mention the obligations upon you and the company in the event of a data breach as well as the ever-changing landscape as technology continues to develop. | |
| **Evidence:** K3 - How to use data ethically and the implications for wider society, with respect to the use of data, automation, and artificial intelligence within the context of relevant data protection policy and legislation. I understand how crucial it is to handle data responsibly and ethically, considering the impact on society. The constant changes in data, automation, and artificial intelligence bring exciting advancements but also potential risks in terms of privacy, security, and ethical use of information.  To ensure ethical data use, I keep myself updated on the General Data Protection Regulation (GDPR), a key legal framework. This regulation provides guidelines for handling sensitive information responsibly, not only for me but also for other Civil Servants and external entities.  Complying with GDPR involves practical steps like collecting only necessary information, getting proper consent, and implementing robust security measures. In my role as a DevOps Engineer, I incorporate these considerations into my work to align with the legislation and respect the rights of data subjects.  In my day-to-day work, data protection policies and legislation have a direct impact on processes and tool choices. Every aspect of my work, including DevOps architectures and tool selection, undergoes scrutiny and approval by teams within DWP Digital. Within my current team, provisioning packages for other engineers as part of the Sheep Dip process requires data movement authorisation, additional security clearance, and a certain level of trust. It’s my duty to ensure that the packages I handle are treated with the upmost level of security and care, as handling anything within secure live environments improperly could result in issues such as data breaches. If such matter was to occur, I must report this incident following DWP’s process and contacting the relevant Data Protection Officers via the Security Incident Response Team.  This ensures that my practices fully comply with data protection policies and legislation. By following these guidelines, I contribute to creating a secure and ethically sound technological environment that meets the evolving demands of the digital era. | |

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| Assessment Theme 3. Problem Solving | |
| Pass Criteria | Distinction Criteria |
| · Identifies different problem-solving techniques and evaluates how they use modelling approaches that are best suited to each technique in order to gain consensus as a team. | · Describes how they facilitated an incident post-mortem/lesson learned session.    · Explains the root cause analysis process. Gains consensus on an improvement plan, including accountabilities and the implementation timeline. |
| K6 - A range of problem-solving techniques appropriate to the task at hand, such as affinity mapping, impact maps, plan-do-check-act/Deming.S21 - Application of lightweight modelling techniques, such as whiteboarding**, in order to gain consensus** as a team on evolving architecture. | |
| **Assessor Feedback:** | |
| **Hints & Tips:** 3-4 problem solving techniques need to be identified and described.  The apprentice must also provide examples of when each of these techniques would be the most appropriate for the given task. | |
| **Evidence:** K6 - A range of problem-solving techniques appropriate to the task at hand, such as affinity mapping, impact maps, plan-do-check-act/Deming. As a DevOps Engineer, I understand the importance of problem solving. To do this I can utilise different techniques, depending on the situation. There are many different techniques that can be used to solve problems. For example, affinity mapping. I can use this technique to group related items in a project or when solving problems, to identify patterns or common themes. This helps me to identify any problems or find solutions.  Other examples of problem solving:   * Impact mapping helps me align the objectives of a project or task to identify its potential impact. Impact mapping helps me to visualise the project outcomes, actions required, thus allowing me to have a clear focus and strategy. This is useful when trying to understand the underlying goal of a project, the goals are unclear or building clarity on an ongoing project. * Plan-Do-Check-Act (PDCA) or Deming cycle is another method which involves continuous improvement and problem solving. I find this approach particularly useful in DevOps as it can help identify areas for improvement, implement changes, and evaluate their effectiveness. This feedback loop helps me refine my problem-solving skills and improve the efficiency of the systems and processes I manage. This is also useful for certain projects where there is a need to improve processes, solve problem and create more efficient processes. * Reverse Brainstorming is a technique used where you begin by thinking of the cause of problems, rather than thinking of the solution straight away. By understand the causes of the problem this can help prevent and solve the cause. This is useful when the problem hasn’t been identified, avoiding coming up with assumptions for solutions and coming up with more creative solutions for the problem at hand. * 5 Why’s is to question the reason behind a problem. The purpose of this technique is to get a deeper understanding of the issues at hand. Usually in a group setting, the facilitator asks the same question 5 times following separate rounds of responses to get a deeper answer and understanding. Not only can I gain a deeper understanding of the issue at hand, but this technique is also useful for team collaboration, decision making, understanding potential consequences and implications of certain decisions, and ensuring clarity. * SCAMPER stands for stands for substitute, combine, adapt, modify, put to another use, eliminate, and reverse. It is a prompt that can be used as a checklist to help think of ideas that may provide different solutions and approaches to the problem at hand. This technique is useful for process improvement and innovation, to improve a project or service by discovering areas of improvement.   Ultimately, there are many other techniques I can use to problem solve. I can leverage and use these different techniques depending on what my task requires of me, ensuring that my results and efficiency are considered. S21 - Application of lightweight modelling techniques, such as whiteboarding**, in order to gain consensus** as a team on evolving architecture. **Situation:**  In the context of the DML project, the challenge was to enhance manageability and comprehension for the entire team regarding the evolving AWS cloud infrastructure managed through Terraform Infrastructure as Code (IaC).  **Task:**  I identified the need for diverse problem-solving techniques and recognised the effectiveness of lightweight modelling, particularly through whiteboarding sessions. The goal was to achieve consensus within the team on the evolving architecture.  **Action:**  To address this, I regularly updated and maintained a visible diagram illustrating the AWS cloud infrastructure. By maintaining the diagrams, I was able to provide a clear overview of ongoing and planned work, fostering better understanding within the team and clear visibility. I communicated anticipated outcomes, aligning the team with the project's objectives. I discussed the architecture using the visual diagram to breakdown complex architectural concepts, ensuring the team easily understood the fine details. The visual representation helped me aid a security-first mindset, ensuring security considerations were made throughout the project. To ensure accessibility, I stored these diagrams in the project repository using Git, enabling easy access for all team members.  **Result:**  The application of lightweight modelling techniques, particularly whiteboarding, not only addressed the immediate challenges but also contributed to the collective shaping of the project's architecture. This approach improved collaboration, alignment with project goals, and the overall adaptability of the team in achieving consensus. The result was a more transparent and comprehensible DML project, where the team worked together towards shared objectives.  A screenshot of a computer  Description automatically generated**Evidence**  S21 1 - Git Commits of DML Diagram Updates    A screenshot of a computer  Description automatically generated    S21 2 - Initial Blank Diagram of AWS Architecture Managed with Terraform  A screenshot of a computer  Description automatically generated  S21 3 - Further Diagram of AWS Architecture Managed with Terraform  A screenshot of a computer  Description automatically generated  S21 4 - Further Diagram of AWS Architecture Managed with Terraform | |

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| Assessment Theme 4. The Profession in Context | |
| Pass Criteria | Distinction Criteria |
| · Identifies the typical multi-disciplinary team roles and explains how they fit within the organisation and the wider digital landscape.    · Explains how they completed a task, deploying a flexible, collaborative and pragmatic approach with peers and other stakeholders.  · Describes examples of different communication methods used when dealing with internal and external stakeholders  · Explains how they have acted in an inclusive and professional manner. |  |
| K18 - Roles within a multidisciplinary team and the **interfaces with other areas of an organisation**.K19 - **Different methods** of communication **and choosing the appropriate one** - e.g., face-to-face (synchronous, high bandwidth), instant messaging, email (asynchronous, low bandwidth), visualisations vs. words.K22 - How their occupation fits into the wider digital landscape and any current or future regulatory requirements.S8 - Work in agile, multi-disciplinary delivery teams, taking a flexible, collaborative and pragmatic approach to delivering tasks.B4 - Is inclusive, professional and maintains a blameless culture. | |
| **Assessor Feedback:** | |
| **Hints & Tips:** How does each role in the team interact with other parts of the organisation. A good way to cover this would be by providing a team chart and job role breakdown (high level overview). | |
| **Evidence:** ~~K18 - Roles within a multidisciplinary team and the~~ **~~interfaces with other areas of an organisation~~**~~.~~K19 - Different methods of communication and choosing the appropriate one - e.g., face-to-face (synchronous, high bandwidth), instant messaging, email (asynchronous, low bandwidth), visualisations vs. words. As a DevOps engineer, I understand the importance of effective communication in everything in life, but even more so in my work. There are many different forms of communication, especially in the digital space, this can make choosing the method of communication an important decision, as this can affect the following response from the audience, either positively, or negatively.  Face to face communication is one of the most powerful methods, as I believe it is the most natural to us. Face to face communication allows for synchronous high-bandwidth interaction. One reason why it’s so powerful is because of the immediate feedback we receive, such as, non-verbal cues, verbal cues, addressing concerns and allowing interaction in real time. It allows us to deal with complex discussions, build relationships, and collaborate in an effective manner to connect with our audience.  Instant messaging apps, like Microsoft Teams, Slack, etc give us instant real-time forms of messaging, voice, and video calls, as well as other tools and functionalities to supercharge these. This is especially useful for teams like mine who are not all placed into one location, and it offers a form of communication at a low cost that is effective, as seen in the Covid-19 pandemic for example. One downside is, using these tools means acceptance from all parties, but also without clear messaging, some messages can be lost in translation or even misinterpreted.  Email or letters, which allow for asynchronous low bandwidth communication can also be used. This is useful for more long-format or formal approaches in communication. It can be used to communication with any number of people, so it is quite effective when addressing a huge number of people. One downside is email isn’t an immediate form of communication, there is a risk to people not receiving emails, not responding, and misinterpreting emails.  Finally, one other form of communication is visualisation. This is extremely useful when trying to demonstrate or convey a complex topic or project. Especially in the world of DevOps, diagrams, charts, graphs, etc are powerful tools that can help a team deliver objectives and understand the complexities and illustrate the project. It also helps for certain individuals who prefer visual images over other forms of communication but can be used in conjunction with other forms to deliver a successful message.  Ultimately, choosing the right form of communication is vital to work and can improve the outcome of a project or message. Some forms of communication can determine the impact of the delivery and receipt from the user, and it should always be considered carefully. | |
| K22 - How their occupation fits into the wider digital landscape and any current or future regulatory requirements. As a DevOps Engineer, I understand how my occupation fits into the wider digital landscape, including understanding how current and future regulatory requirements may impact the decisions I make and the work I do. The digital landscape is forever evolving, especially in the DevOps space, as this is a role that bridges the gap between Software Development and Operations.  The impact of DevOps Engineering on an organisation like DWP is extremely important which includes the wider Digital organisation, stakeholders, other colleagues outside of Digital and even customers. Adopting a DevOps mindset helps us streamline processes, software development, improve collaboration and continuous improvement. This helps us to deliver more value, quicker and safely by introducing quality control and automated ways of testing, quality checks etc.  Regarding regulatory requirements, the digital landscape is subject to several regulations, ensuring data privacy, security, law, and legislation is abided by. As a DevOps Engineer I understand how my role fits in and must comply with these rules. For example, General Data Protection Regulation (GDPR) is something all organisations, especially DWP has to abide by. Handling data with care, storing it correctly and processing it correctly within the law and legislation is of upmost importance. My role as a DevOps Engineer means I must take this into consideration when designing, implementing, and processing data.  As the digital landscape evolves, so does future regulations. One example is artificial intelligence (AI) and the implications on its users and society in general. Even more so now as AI systems are being developed at a faster rate and will begin to change the digital landscape at an increasing speed. It is important to stay informed of the developments of areas like AI, its regulations and always ensuring compliance.  Ultimately, as a DevOps Engineer, I understand my role is extremely crucial when developing and designing processes. I must always keep informed up to date with regulations, legislation and law to ensure I comply at all times and keep my knowledge up to date. **S8 and B4 Combined**S8 - Work in agile, multi-disciplinary delivery teams, taking a flexible, collaborative and pragmatic approach to delivering tasks.B4 - Is inclusive, professional and maintains a blameless culture. **Situation:**  In our work on the DML project, I applied agile principles, being flexible and practical in how tasks were tackled within our varied team. I made sure that each team member’s role fit well into the structure of our organisation and the wider digital environment.  **Task:**  To meet the changing needs of the DML project, I used agile methods to stay adaptable and responsive. I collaborated smoothly with different professionals using Slack and Microsoft Teams, including Site Reliability Engineers (SRE), my Software Release team, and others in the DWP network.  **Action:**  I managed project tasks efficiently using the Kanban method, prioritising and completing tickets based on project priorities. Choosing Kanban over Agile methodology’s such as Scrum was essential to the project as Scrum is great for development teams who would like to dedicate a portion of time to a known outcome for two weeks, however as this project was very dynamic and ever-changing the Kanban method was more appropriate. The DML project involved trying out various software solutions like Apache Archiva, Nexus, and a bespoke solution. I focused on the most important tasks to move the project forward and kept the team informed about progress.  By using communication tools like Slack and Microsoft Teams, I kept a constant flow of information with the wider team. This helped us collaborate within the team and communicate effectively with the wider DWP organisation, adapting quickly to challenges.  Inclusivity and maintaining a blameless culture were integral to my approach. I fostered a positive team culture by engaging in inclusive and professional interactions. This created an environment where diverse perspectives were valued, and agreements were easily reached. This blameless culture not only improved the overall project experience but also strengthened relationships with all the participants.  **Result**:  As a result of these efforts, the DML project successfully trialled a few solutions with conclusive findings. Our flexible and collaborative approach allowed us to integrate different software solutions effectively, meeting project goals and showcasing the adaptability of our team.  Additionally, by engaging in inclusive and professional interactions, I contributed to a positive team culture. This inclusive approach created an environment where diverse perspectives were valued, and agreements were easily reached. This professionalism not only improved the overall project experience but also strengthened relationships with participants and team members.  In summary, my commitment to agile principles, combined with effective collaboration and communication, played a crucial role in the successful delivery of the DML project. The outcomes of the project highlight the importance of being flexible and practical when working in a team with various roles, especially in the constantly changing digital landscape.  **Evidence:**  A screenshot of a computer  Description automatically generated  S8 and B4 1 - Kanban Jira Board  A screenshot of a computer  Description automatically generated  S8 and B4 2 - Kanban Jira Ticket | |

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| Assessment Theme 5. Tooling and Technology | |
| Pass Criteria | Distinction Criteria |
| · Explains the difference between the various types of implementations - on premise v SaaS, open-source v enterprise, bespoke v off-the-shelf.  · Explains an example of having utilised the right type of tool for a particular task, describing the pros and cons of the alternatives. | · Justifies their choice of tooling and the potential impact of making an alternative choice explaining the cause and effect of making the wrong decision. |
| K24 - The **difference between** Software-as-a-Service (SaaS) v bespoke v enterprise tooling and **how to make an informed choice** that suits each use case. | |
| **Assessor Feedback:**  ACTION – I have highlighted from the bullet points above the comparisons that you may be asked about during the discussion that I would like for you to cover here. | |
| **Hints & Tips:** After defining the differences use the information to select the most appropriate implementation that suits their company’s needs. They would need to explore the outcomes if they had made a wrong decision (this may be time or financial related). | |
| **Evidence:**   K24 - The difference between Software-as-a-Service (SaaS) v bespoke v enterprise tooling and how to make an informed choice that suits each use case. As a DevOps Engineer, I understand the differences between Software-as-a-Service (SaaS) v bespoke v enterprise tooling and how to make an informed choice that suits each use case.  SaaS is a ready to use solution out of the box, provided by companies like Amazon, Microsoft, GitLab etc. SaaS allow us to utilise software without any advanced setup or maintenance. SaaS offers scalability, automatic updates, and often integrates with other cloud services. This can be effective when considering convenience, rapid deployment, and cost-effectiveness.  **On Premise vs. SaaS:**  **On** Premise**:**   * You control everything – software, data, and infrastructure – allowing for specific configurations and security measures. * It's highly customisable, tailored to your unique business needs. * Hosted locally, it works without constant internet connection. * Setting up and maintaining on-premises infrastructure can be costly. * You're responsible for regular maintenance, updates, and patching. * Some providers may prioritise their SaaS, limiting available features.   **SaaS:**   * Lower initial costs with a subscription model, especially good for smaller businesses. * Providers handle updates and maintenance, ensuring access to the latest features and security patches. * No need for in-house server or software management. * Relies on a stable internet connection. * Less flexible than on-premises solutions. * While initial costs are lower, long-term subscription costs add up.   Enterprise tooling is usually software solutions created to cater for large organisations. They usually offer tailored solutions for large organisations to deal with scalable solutions e.g., HR systems. They usually are offered with customisation and integration tools, as well as support services. This can help the organisation as usually these tools are proven and already used by many other organisations. One downside is the ability to customise and the potential costs.  **Open-Source vs. Enterprise Software:**  Open-Source:   * Typically free, saving on licensing fees. * Some have a large developer community for ongoing support. * Code transparency fosters innovation. * Formal support may be limited, relying more on community forums. * Security is a concern, and users bear responsibility. * Customisation can take longer due to in-house development.   **Enterprise Software:**   * Comes with dedicated support for quick issue resolution. * Tailored for large organisations with advanced features. * Efficiently scales for enterprise growth. * Involves high upfront licensing costs. * Relies on the vendor for updates, limiting control. * Customisation options may be limited.   Bespoke tooling is custom designed software that can be used to meet specific requirements, address unique challenges, and allow for full control and adaptability. Maximum flexibility allows for full consideration of design and outcome. One challenge of bespoke tooling is the cost of investment, maintenance and resource which can be quite high in comparison to SaaS and Enterprise tooling.  **Bespoke vs. Off-the-Shelf:**  Bespoke **(Custom) Software:**   * Precision-fit for specific business needs. * Offers a unique edge but involves a significant upfront investment. * Becomes cost-effective over time, evolving with changing needs. * Development takes time and ongoing support may require resources.   **Off-the-Shelf Software:**   * Quickly implemented with lower initial costs. * Vendor support includes regular updates. * May need workflow adaptations. * Some features may be irrelevant. * Future updates are determined by the vendor.   To make an informed choice about which tooling to use, it’s important to consider the specific requirements, such as the users, budget, scalability, customisation, and time constraints. SaaS tools are ideal for quick deployment with smaller budgets and less maintenance. Bespoke tools are suitable for solutions that do not already exist for the unique business needs, and where customisation and flexibility are important. Enterprise tools are suited for solutions for large scale complex problems that require proven results and extra support.  By understanding these differences this can help me with my work as a DevOps Engineer to ensure I choose the appropriate tooling to deliver projects and services in a timely budget friendly manner. | |
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| Assessment Theme 6. Continuous Learning and Development | |
| Pass Criteria | Distinction Criteria |
| · Explains the CPD undertaken by themselves in order to keep up with cutting edge technologies and maintain appropriate certifications.  · Explains how they invest in others continuous learning and activities and the impact this has on their own development. | · Gives examples of how their CPD has had a positive impact on theirs and their team’s work.  · Explains how this has helped them perform their role better and make better technology choices. |
| K25 – Maintain **an awareness** of cloud certification requirements.S16 – Invest in **continuous learning**, both your own development **and others**, ensuring learning activities dovetail with changing job requirements. Keep up with cutting edge.B2 – Invests time and effort in their own development, recognising that technology evolves at a rapid rate. | |
| **Assessor Feedback:** | |
| **Hints & Tips:** Evidence of a CPD log would be ideal here. Providing an explanation on how a greater understanding of the technologies that are utilised in the DevOps space has improved their ability and understanding in the role. | |
| K25 – Maintain **an awareness** of cloud certification requirements. As a DevOps engineer, I understand the importance of maintaining an awareness of cloud certification requirements. Cloud certifications can help build my skills and knowledge, identify gaps in my learning and ensure I stay up to date in the ever-evolving world of DevOps and Digital.  There are different training providers for cloud certification, which include cloud service providers such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). These certifications can help me to assess and validate my knowledge and skills as required when working with different services and tools.  There are many benefits of staying up to date and developing an awareness of these certifications. It can help me to develop my professional development by acquiring certifications that align with my career as well as the needs of DWP Digital. Another benefit of cloud certifications is that they can help me understand different cloud concepts, architectures and best practices, which is valuable when working as a DevOps Engineer, ensuring I can demonstrate my ability to choose effectively, correct tooling and processes whilst abiding by best practices and deliver the best outcome possible.  By actively pursuing cloud certifications and staying aware of evolving requirements, I can ensure I am up to date with the latest technologies as a DevOps Engineer. This not only benefits my professional growth but also enables me to contribute effectively to DWP Digitals cloud based goals and continuously improve my work and wider team by facilitating knowledge sharing.     **S16 and B2 Combined**S16 – Invest in **continuous learning**, both your own development **and others**, ensuring learning activities dovetail with changing job requirements. Keep up with cutting edge.B2 – Invests time and effort in their own development, recognising that technology evolves at a rapid rate. **Situation:**  During the execution of the DML project, I identified the need to incorporate Terraform for infrastructure development, aligning with project requirements.  **Task:**  Recognising my limited knowledge of Terraform, I embarked on a journey to upskill and become proficient in this essential technology.  **Action:**  I engaged in a comprehensive learning process, utilising diverse resources such as Terraform's official online documentation, completing a digital training program on A Cloud Guru, participating in a 3-day Terraform classroom training, and supplementing my knowledge through extensive online research.  I applied my newfound expertise by testing it in a sandbox environment and seamlessly integrating Terraform into the DML project. Additionally, I extended my support to team members and separate apprentices by sharing my knowledge and assisting them in their learning endeavours.  **Result:**  The impact of my continuous learning efforts was evident in the streamlined execution of the DML project. The incorporation of Terraform not only enhanced my individual performance but also positively influenced the team's overall capabilities. This proactive approach contributed to better technology choices, ultimately contributing to the project's success. My commitment to continuous learning not only strengthened my personal skills but also had a ripple effect on the team's collective competence, showcasing the significance of staying abreast of cutting-edge technologies in the fast-evolving landscape of our industry.    **Evidence:** Training Undertaken During my apprenticeship at DWP it is necessary for me to upskill and carry out training for different reasons. Some training is required simply due to the training being mandatory for all staff in DWP, for example, Health and Safety. Additionally with guidance and help from my manager I will be undertaking training relevant to my role and apprenticeship to allow me to improve my skills and knowledge to help deliver objectives within my team and the wider department. I have created a personalised training plan which will enable me to develop my skills as a DevOps Engineer and keep my knowledge up to date ensuring that I am aware of the latest technologies and methodologies.   |  |  |  |  | | --- | --- | --- | --- | | Training Course | Relevance | Time Spent | Completion Date | | Software Development Bootcamp | Initial bootcamp training provided by Makers. This bootcamp provided me with basic Software Development knowledge to supplement my DevOps apprenticeship | 10 weeks | 9th March 2022 | | DevOps Engineering Bootcamp | Further bootcamp training provided by Makers to give me a basic overview and idea of DevOps before starting my role in DWP as an apprentice. | 8 weeks | 6th May 2022 | | Personal Health and Safety | Mandatory online training required for all DWP staff. |  | 23rd May 2022 | | Display Screen Equipment | Mandatory online training required for all DWP staff. |  | 18th May 2022 | | Think Secure: Security & Data Protection at DWP 2022 | Mandatory online training required for all DWP staff. |  | 7th June 2022 | | Fraud Error and Debt Awareness in DWP 2020-2021 | Mandatory online training required for all DWP staff. |  | 7th June 2022 | | Public Sector Equality Duty | Mandatory online training required for all DWP staff. |  | 24th May 2022 | | Introduction to Python Scripting | Python Scripting Introduction training on A Cloud Guru to support my first Ticket 1 [Jira Epic BCM-656] – Develop tooling for auditing Micro Focus StarTeam user accounts. | 6 hours | 01/07/2022 | | Python Object-Oriented Programming Basics | Python Object-Oriented Programming Introduction training on A Cloud Guru to support my first Ticket 1 [Jira Epic BCM-656] – Develop tooling for auditing Micro Focus StarTeam user accounts. | 2 hours | 11/07/2022 | | Scrum Training Course |  | Details to be added | Details to be added | | Terraform Training Course |  | Details to be added | Details to be added | | AWS Training Resources |  | Details to be added | Details to be added |   S16 and B2 1 - Table of Training Undertaken  **A screenshot of a computer screen  Description automatically generated**  S16 and B2 2 - Terraform Training Course  **A white paper with blue text  Description automatically generated**  S16 and B2 3 - Scrum Certification Following Training Course | |

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| Assessment Theme 7. Peer Review | |
| Pass Criteria | Distinction Criteria |
| · Explains the benefits, in terms of security and overall quality, of subjecting written code to the scrutiny of others. Explains how they collaborate on code through pair/mob commits. |  |
| K20 – Pair/mob programming techniques and **when to use** each technique.S13 – Engage in productive pair/mob programming. | |
| **Assessor Feedback:**  ACTION – This is a great start and thorough with the definitions of pair and mob included. I would recommend that you mention a few other types of pairing further to the driver and navigator method that you have already included. (You may use this link as a starting point of research - <https://stackify.com/pair-programming-styles/>) | |
| **Hints & Tips:** Around 2-3 examples of different pair/mobbing techniques would need to be identified and described.  The apprentice must also provide examples of when each of these techniques would be the most appropriate.  What the benefit of the techniques is to the code quality. | |
| **Evidence:** K20 – Pair/mob programming techniques and **when to use** each technique. As a DevOps Apprentice, my journey into collaborative programming includes different methods like pair and mob programming, along with Ping-Pong Pairing, Backseat Navigator, and Ensemble Programming. I started this journey during my early days at Makers bootcamp.  Pair programming is when two developers work together at one computer. One person writes the code (the driver), and the other guides the process (the navigator). Switching roles keeps the collaboration effective.  **Pair Programming:**  Pros and Cons:   1. **Fewer Mistakes:** Working together reduces errors and improves code quality. 2. **Sharing Knowledge:** Developers exchange best practices and creative ideas. 3. **Better Teamwork:** Enhances workplace collaboration and breaks down silos. 4. **Potential Costs:** Sharing a computer might increase organisational expenses. 5. **Possible Challenges:** Collaboration might lead to reduced productivity or conflicts.   I've also tried Ping-Pong Pairing, where two developers take turns as the driver and navigator, promoting continuous collaboration and idea exchange.  **Ping-Pong Pairing:**  Pros and Cons:   1. **Continuous Collaboration:** Allows continuous idea exchange and collaboration. 2. **Boosts Creativity:** Encourages creative problem-solving through diverse perspectives.   Adding to this, there's the Backseat Navigator method, where one developer takes a supportive role similar to a mentor, offering guidance and suggestions while letting the main driver stay in control.  **Backseat Navigator:**  Pros and Cons:   1. **Guided Support:** Offers guidance and suggestions while keeping the main driver in control. 2. **Potential Challenges:** Introducing a mentor-like role may need extra coordination.   Expanding further, I've taken part in Ensemble Programming, a version of mob programming where the entire team actively works together. This encourages collective problem-solving, knowledge sharing, and creative contributions from everyone.  **Ensemble Programming:**  Pros and Cons:   1. **Full Team Collaboration:** Involves the whole team in problem-solving. 2. **Improved Communication:** Enhances communication within the team, promoting shared understanding.   To deepen my understanding, I'm exploring various pairing styles beyond the usual ones. S13 – Engage in productive pair/mob programming. **Situation:**  During the DML project, I realised the importance of working together efficiently. With two colleagues, my manager, and a team member, I focused on project tasks like fixing issues and creating Terraform Infrastructure as Code (IaC).  **Task:**  Our goal was not just to solve coding problems but also to make sure our code was secure and of high quality. To do this, I regularly teamed up for pair/mob programming sessions, where we collaborated in real-time, shared ideas, and fixed errors together.  **Action:**  In our teamwork, I regularly made joint commits to review, refine, and improve our code. This process helped us learn faster and make our solution stronger. I made sure that checking our code wasn't just a routine; it was a thorough practice that contributed to the project's success.  I also saw the value in sharing knowledge and improving skills within the team. Taking part in pair/mob programming became a way for us to share what we knew, creating a lively learning environment. This not only helped us understand the project better but also gave everyone new insights and skills.  **Result:**  Using pair/mob programming and focusing on learning together had positive outcomes. Our code became more secure and better in quality. Additionally, each team member gained new skills and improved existing ones. This collaborative and learning approach played a big part in achieving the DML project's goals, showing that engaging in productive pair/mob programming is effective for both project success and personal growth.  **Evidence:**  **A screenshot of a computer  Description automatically generated**  S13 1 - Terraform IaC Error Codes  **A screenshot of a computer  Description automatically generated**  S13 2 - Mob Programming  **A screenshot of a computer  Description automatically generated**  S13 3 - GitLab Pipeline Pass after Mob Programming to Fix Errors | |

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| Assessment Theme 8. Communicating and Knowledge Sharing | |
| Pass Criteria | Distinction Criteria |
| · Explains when they have:  A. lead a demonstration or discussion in an engaging manner, communicating at the right level to suit technical and non-technical audiences.  B. worked collaboratively to share knowledge through, for example, blog posts and pairing on tasks. |  |
| ~~S1 – Communicate credibly with~~ **~~technical~~** ~~and~~ **~~non-technical people~~** ~~at all levels,~~ **~~using a range of methods~~**~~; e.g., ‘Show and Tell’ and ‘Demonstrations’.~~~~S4 –~~ **~~Initiate~~** ~~and~~ **~~facilitate~~** ~~knowledge sharing and technical collaboration.~~~~B1 - Exhibits enthusiasm, openness and an aptitude for working as part of a collaborative community; e.g., sharing best practice, pairing with team members, learning from others and engaging in peer review practices.~~ | |
| **Assessor Feedback:** | |
| **Hints & Tips:** The difference in approach would be required in the given examples (using acronyms and technical jargon with the tech-based people and a more simplified approach with the non- tech). The types of discussion should be from both show and tells as well as demonstrations (certain types of pair programming fall under this). | |
| **Evidence:** | |