

**NCFE Level 3 Certificate in Coding Practices (603/5793/9)**

**Statement of authenticity**

Learner name:

Centre number:

Centre name:

**Signatures**

Learner: Date:

Tutor/Assessor: Date:

Internal Quality Assurer (IQA)\*: Date:

External Quality Assurer (EQA)\*: Date:

\* For completion if part, or all, of the evidence has been sampled by the Internal and/or External Quality Assurer

**Unit 01 Coding requirements and planning (M/618/0976)**

**Learning outcome 1**

**You will:** Understand software methodologies in project management

You must:

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| --- |
| **1.1 Summarise the key features of the following:*** **scrum**
* **kanban**
* **waterfall**
* **agile.**
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.2 Describe the similarities and differences between:*** **scrum**
* **kanban**
* **waterfall**
* **agile.**
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

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| **1.3 Consider the strengths and weaknesses of each methodology** |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **1.4 Give an example of when each methodology is most suitable** |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

**Learning outcome 2**

**You will:** Understand the capture and documentation of requirements

You must:

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| --- |
| **2.1 Identify the process of requirements capture** |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **2.2** Describe the following terms:* epics
* features
* user stories
* backlogs.
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

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| **2.3** Explain alternative methods of documenting requirements  |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

**Learning outcome 3**

**You will:** Understand risk management

You must:

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| --- |
| **3.1** Explain what is meant by risk management |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.2** Describe potential risks that could affect project delivery |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

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| **3.3** Describe how to reduce risk and follow risk mitigation |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.4** Explain what is meant by a project’s critical path |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

**Learning outcome 4**

**You will:** Understand how teamwork contributes to effective delivery of software

You must:

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| **4.1** Explain the need to develop working relationships with other teams |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **4.2** Identify the benefits of developing positive working relationships with other teams and departments |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
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| **IQA/EQA feedback**  |

**Unit 01 Coding requirements and planning (M/618/0976)**

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| **4.3** Explain conflict management techniques that may be used for effective team collaboration |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **4.4** Explain the potential impact of ineffective working relationships with other teams and departments |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **4.5** Explain how team members can reflect on progress and identify improvements |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

**Learning outcome 1**

**You will:** Understand the use of coding standards

You must:

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| --- |
| **1.1** Identify the importance of coding standards |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.2** Explain the consequences of not following coding standards |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **1.3** Explain the processes and tools that could be used to promote coding standards |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

**Learning outcome 2**

**You will:** Understand the purpose of good coding principles and practices

You must:

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| --- |
| **2.1** Identify good coding principles and practices used by software developers  |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **2.2** Explain why it is important to follow good coding principles and practices |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **2.3** Draw conclusions from the use of **coding practices and principles** |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

**Learning outcome 3**

**You will:** Know about coding reviews

You must:

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| --- |
| **3.1** Identify different types of coding review |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **3.2** Explain why code is reviewed |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **3.3** Explain why it is important to undertake a coding review |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.4** Explain the importance of effective feedback in a coding review |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.5** Distinguish the difference between submitting and performing a coding review |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **3.6** Explain the advantages and disadvantages of:* pair programming
* mob programming
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

**Learning outcome 4**

**You will:** Understand databases

You must:

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| --- |
| **4.1** Explain what is meant by:* structured data
* unstructured data
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **4.2** Describe what is meant by databases |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **4.3** Describe the structure and key components of a database table |
| What have you done to show this?  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **4.4** Explore the use of primary and foreign keys |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **4.5** Describe techniques for querying databases |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **4.6** Explain the purpose of database indexing |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

**Learning outcome 5**

**You will:** Understand the principles of interface design

You must:

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| --- |
| **5.1** Identify the elements of design |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **5.2** Describe the differences between UX and UI |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **5.3** Explain the key skills required for creative problem-solving |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **5.4** Describe the key methods and techniques used in creative problem-solving |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **5.5** Explain the importance of information architecture and UX |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **5.6** Explain the principles of good user interface design |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

**Learning outcome 6**

**You will:** Understand the importance of building security by design into software at the development stage

You must:

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| --- |
| **6.1** Describe what is meant by building security by design into software at the development stage |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **6.2** Explain methods used to ensure software is secure |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 02 Understand coding design (A/618/0978)**

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| **6.**3 Identify types of security issues and threats that can impact software development |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 03 Implementation of coding (F/618/0979)**

**Learning outcome 1**

**You will:** Understand tools used in coding

You must:

|  |
| --- |
| **1.1** Identify tools used in coding |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.2** Select the appropriate development environment for different **languages** |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 03 Implementation of coding (F/618/0979)**

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| **1.3** Describe what is meant by source code control |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.4** Evaluate source code control solutions |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 03 Implementation of coding (F/618/0979)**

**Learning outcome 2**

**You will:** Understand key concepts of coding

You must:

|  |
| --- |
| 2.1 Explain these common coding concepts: * iterations
* sequences
* selection
* data
* methods.
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

|  |
| --- |
| **2.2** Explain these object orientated programming concepts:* objects
* fields
* interfaces
* classes
* properties
* encapsulation
* abstraction
* inheritance
* polymorphism.
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 03 Implementation of coding (F/618/0979)**

**Learning outcome 3**

**You will:** Be able to debug and write code

You must:

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| --- |
| **3.1** Identify how to write and debug interpreted code |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **3.2** Identify how to write and debug compiled code |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 03 Implementation of coding (F/618/0979)**

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| **3.3** Identify issues that can occur cross-platform |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **3.4** Implement a solution in:* interpreted code
* compiled code.
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.5** Distinguish the differences of the coding solutions |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 04 Software testing (T/618/0980)**

**Learning outcome 4**

**You will:** Understand different levels, types and methods of testing

You must:

|  |
| --- |
| **1.1** Identify different levels, types and methods of testing |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.2** Explain the types and methods of testing used within the stages of the Software Development Lifecycle |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 04 Software testing (T/618/0980)**

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| **1**.**3** Explain the differences between functional and non-functional testing |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 04 Software testing (T/618/0980)**

**Learning outcome 2**

**You will:** Know about test driven development

You must:

|  |
| --- |
| **2.1** Explain what is meant by test driven development |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **2.2** Describe the structural composition of a unit test |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 04 Software testing (T/618/0980)**

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| **2.3** Explain the advantages and disadvantages of unit testing |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **2.4** Consider what would make a bad unit test |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 04 Software testing (T/618/0980)**

**Learning outcome 3**

**You will:** Be able to identify and fix a bug

You must:

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| **3.1** Explain techniques which can be used to identify and fix bugs |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.2** Describe benefits of the following techniques:* variable watching
* compiler warnings
* unit test
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 04 Software testing (T/618/0980)**

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| **3.3** Diagnose the cause of a bug using the following techniques:* variable watching
* compiler warnings
* unit test.
 |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.4** Perform a fix on broken code |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.5** Reflect on how the bug could have been prevented |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 05 Understand deployment, maintenance and configuration management (A/618/0981)**

**Learning outcome 1**

**You will:** Know about deployment

You must:

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| --- |
| **1.1** Explain how to package an artefact |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.2** Explain the importance deployment planning |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 05 Understand deployment, maintenance and configuration management (A/618/0981)**

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| **1.3** Explain the difference between build and deploy |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.4** Identify the advantages and disadvantages of canary deployment |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **1.5** Describe what is meant by deployment strategy |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.6** Describe what is meant by continuous deployment |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **1.7** Identify what is meant by rollback strategy |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 05 Understand deployment, maintenance and configuration management (A/618/0981)**

**Learning outcome 2**

**You will:** Understand maintenance in coding

You must:

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| --- |
| 2.1 Identify the key elements of maintenance |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **2.2** Explain why documentation of maintenance is important |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 05 Understand deployment, maintenance and configuration management (A/618/0981)**

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| **2.3** Explain the improvements that could be made in maintenance |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| --- |
| **2.4** Explain why change management is used in maintenance |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 05 Understand deployment, maintenance and configuration management (A/618/0981)**

**Learning outcome 3**

**You will:** Understand configuration management and version control systems

You must:

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| --- |
| **3.1** Explain what is meant by configuration management |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

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| **3.2** Explain the tools and techniques used in configuration management systems |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |

**Unit 05 Understand deployment, maintenance and configuration management (A/618/0981)**

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| **3.3** Explain the main features and benefits of version control systems |
| **What have you done to show this?**  | Location of evidence (eg hyperlink/portfolio page number) |
|  |  |
| **IQA/EQA feedback**  |