# Appendix 1: Assessment information for candidates

This assessment applies to the following Unit, Outcomes and Assessment Standards:

### Information System Design and Development (Advanced Higher)

**Outcome 1**

**1** **Develop complex information systems using appropriate development tools by:**

1.1 Using an appropriate design methodology

1.2 Implementing a searchable structure with a user interface

1.3 Writing code using a query language

**Outcome 2**

**2** **Explain how information systems are developed and managed by:**

2.1 Explaining the role of project planning and management techniques

2.2 Explaining the need for testing, evaluation and maintenance

### Outcome 3

**3 Investigate the implications of a contemporary development by:**

3.1 Describing its main purpose, features and applications

3.2 Describing a related technical challenge or area of current research

3.3 Explaining its legal and/or ethical implications

3.4 Evaluating its environmental, economic and/or social impact

To pass this assessment you will have to show that you have met these Outcomes and Assessment Standards.

Your assessor will let you know how the assessment will be carried out and any required conditions for doing it.

## Information System Design and Development (Advanced Higher)

## Tasks to meet Outcomes 1, 2 and 3

### Wild Scot Trust website

**Outline of activity**

The Wild Scot Trust gathers details of where to spot wildlife native to Scotland.



[Image: GoFreeDownload.net](http://gofreedownload.net/free-vector/vector-clip-art/scottish-thistle-and-flag-124400/#.U9gTbPk7um4)

The Wild Scot Trust has asked you to develop a database-driven website to display information about the best places to spot Scottish wildlife. Visitors to the site will be able to search the wildlife details and register for membership of the Wild Scot Trust. Once registered, members should be able to login to the website in order to access member services such as updating their personal details and purchasing Wild Scot Trust merchandise.

**What you have to do:**

**Task 1**

Describe **one** project planning or project management technique that could be used to plan or manage the development of the website for the Wild Scot Trust. Your description should explain the role of your chosen technique by describing its purpose and how it would be used in the development of the Wild Scot Trust website.

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| *Successful completion of this task will gain a pass for Assessment Standard 2.1 in Outcome 2 of the Information Systems Design and Development Unit.* |

**Task 2**

As a result of the initial project planning, the development of the website has been split into several separate phases.

You will be working on Phase 1, which will include the development of:

* Home page
* Search Results page

To complete this Phase, the Wild Scot Trust has provided you with:

* a jpeg file called ***trust\_logo.jpg*** which contains the Wild Scot Trust logo
* a TXT file called ***about the Trust*** which contains the text for the introductory paragraph for the Home page
* a CSV file called ***animal*** which contains the animal data
* a detailed description of Phase 1 of the website

**CSV file**

This file contains details of the data that will be stored in a new database for the Wild Scot Trust.

A hard copy of the animal details is provided below.

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| **AnimalID** | **AnimalName** | **Category** | **BestPlaceToSee** |
| 1 | Otter | Mammal | Freshwater habitats throughout Scotland |
| 2 | Bluenosed dolphin | Mammal | Seen around the coasts of Scotland |
| 3 | Habour seal | Mammal | Along the West Coast, the Hebrides, Orkney and Shetland |
| 4 | Minke whale | Mammal | Waters between Mull and Ardnamurchan |
| 5 | Pine marten | Mammal | Woodland along the West Coast |
| 6 | Red deer | Mammal | Upland forests and moorlands throughout Scotland |
| 7 | Red squirrel | Mammal | Strathspey, Deeside and glens west of Loch Ness |
| 8 | Wildcat | Mammal | Aberdeenshire, Moray and the Highland region |
| 9 | Osprey | Bird of prey | Highlands and the Borders |
| 10 | Peregrine falcon | Bird of prey | Throughout Scotland |
| 11 | Red kite | Bird of prey | Black Isle, the Trossachs and Dumfries and Galloway |
| 12 | Golden eagle | Bird of prey | Isle of Mull |
| 13 | Puffin | Sea bird | Around the coasts of Scotland from Galloway to Wick and St Kilda |
| 14 | Gannet | Sea bird | Bass Rock, Ailsa Craig and St Kilda |
| 15 | Guilliemot | Sea bird | Orkney, Shetland and Sound of Harris |
| 16 | Capercaillie | Inland bird | Pinewoods around the Cairngorm mountains |
| 17 | Chough | Inland bird | Islay |
| 18 | Ptarmigan | Inland bird | Mountains in Cairngorms, Ben Nevis and Wester Ross |
| 19 | Red grouse | Inland bird | Heather moorlands throughout Scotland |
| 20 | Dotterel | Wading and ground nesting bird | High plateaus in the Highlands |
| 21 | Oystercatcher | Wading and ground nesting bird | Coastal beaches and beside rocky coves |
| 22 | Red-necked phalarope | Wading and ground nesting bird | Western and Northern Isles of Scotland |
| 23 | Red-throated diver | Wading and ground nesting bird | Shetland, Orkney, and the Outer Hebrides |
| 24 | Atlantic salmon | Fish | Freshwater streams and rivers of Scotland |
| 25 | Basking shark | Fish | Along the West Coast of Scotland |

**Detailed requirements of the website (Phase 1)**

There are only two pages required for Phase 1 of the website; the Home page and the Search Results page. Each of these should link to the other. This link may be activated by a hyperlink or by a button script.

Search Results page

Home page

1. The **Home page** should:

* welcome visitors to the site
* display the introductory paragraph provided by the Wild Scot Trust
* provide a search facility that allows site visitors to search the wildlife by name or by category

1. The **Search Results page** should display details of the animals   
   (Animal Name, Category and Best Place To See) selected by the user; if no animals are available, a suitable error message should be displayed.
2. The Wild Scot Trust wants to store the following details about each of the animals in a database table that will be managed by a database server:

* Animal ID
* Animal Name
* Category
* Best Place To See

Note that Animal ID should be allocated automatically by the database server and should **not** be entered by the user.

1. When using the search facility, visitors must enter at least **one** search criteria to obtain a valid result. If the search criteria box is left empty, visitors should receive an appropriate error message, with a hyperlink back to the Home page, to enable them to resubmit search criteria.
2. Both pages should have a consistent layout, which must include the Wild Scot Trust logo.

**Task 2 — Part 1**

* Use an appropriate design methodology to show the planned structure of the ***animal***table that will be held on the database server.
* Keep this evidence to submit to your assessor.

**Task 2 — Part 2**

* Use an appropriate design methodology to design the planned user interface for the Home page. You should clearly indicate the layout of the page, how data will be entered, how the search criteria will be validated, and how users will interact with data stored on the database server.
* Keep this evidence to submit to your assessor.

**Task 2 — Part 3**

* Create the new database that will be used to store the animal details on the database server.
* Write the code to create the structure for the***animal*** table.
* Obtain hardcopy evidence of the implemented structure of the ***animal*** table. (This evidence should indicate the data types and details of the primary key of the implemented table.)
* Ask your assessor for the CSV file and import data into the ***animal*** table.
* Keep this evidence to submit to your assessor.

**Task 2 — Part 4**

* Ask your assessor for the TXT file containing the introductory paragraph to be included on the Home page.
* Create HTML script for the Home page. You should ensure that the website provides an appropriate user interface that allows users to submit ***animal***search criteria (you should base the layout of the page on the user interface planned at Part 2 above).
* Obtain hardcopy evidence of your HTML script for the Home page.
* Keep this evidence to submit to your assessor.

**Task 2 — Part 5**

* Create server-side script to execute code (written in a query language) that searches the ***animal*** table.
* Test your script to make sure that it works correctly.
* Obtain screen shots of the user interface you have created to enable users to interact with data stored in the ***animal*** table. The screen shots should demonstrate that the search facility and the validation script work correctly.
* Obtain hardcopy evidence of your server-side script.
* Keep this evidence to submit to your assessor.

**Task 2: Evidence**

You should give your assessor the following:

* Completed design of the ***animal***table.
* Completed design of the user interface for the Home page.
* Hardcopy evidence of the implemented structure of the ***animal*** table.
* Hardcopy evidence of the HTML script used to create the Home page.
* Screen shots of the user interface you created to enable users to interact with data stored in the ***animal*** table.

Hardcopy evidence of server-side script used to validate the user input and execute code, written in a query language that performs searches on the ***animal*** table.

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| *Successful completion of all five parts of this task will gain a pass for Outcome 1 of the Information Systems Design and Development Unit.* |

**Task 3**

As the developer of the Wild Scot Trust website, you will be expected to carry out testing, evaluation and maintenance of the whole site once all phases are completed.

Explain why:

* testing
* evaluation
* maintenance

are important in the development of the Wild Scot Trust website. Candidates need to provide a specific example for each.

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| *Successful completion of this task will gain a pass for Assessment Standard 2.2 in Outcome 2 of the Information System Design and Development Unit.* |

## Task 4

## Outline of activity:

**Choosing a contemporary development to investigate**

You may choose any suitable contemporary development to investigate, but it must be:

* real-world (not a classroom project)
* contemporary (currently under development, recently completed, or in regular uses rather than historical)
* complex (include some innovative or advanced processes)

Examples of suitable developments to be investigated could include, for example:

* computer architecture (eg parallel or multi-processor computing systems or smart devices)
* artificial intelligence (eg robotics, intelligent systems, vision systems, speech systems)
* an interactive system (eg social media, transactional systems, games)
* networking (eg cloud computing, security)

Chosen developments can be large or small scale, but must have a suitable degree of complexity, and be either currently in regular use, recently completed or under development. Your findings should be focused on evaluating the impact and implications of the development, rather than just a description. The investigation could be based on printed or online sources of information, or may involve site visits.

**Making a decision**

1. On your own, or with your teacher/assessor or other students, produce a list of possible developments that you might investigate.
2. On your own, or with your teacher/assessor or other students, consider each idea and think about:
   1. Does it meet the criteria (real-world, contemporary, complex)?
   2. Is it something that I would find interesting?
   3. Will it be feasible — will I be able to gather information on its implications?
3. In discussion with your assessor, choose a development to investigate.

**Carrying out your investigation**

This task involves investigating, which might also be called research. You will find some useful guidance and tips on research in the Coursework Assessment Task.

During your investigation, it is important to make notes on what you find, so that you will be able to compile this into a short report.

Research and investigation may be carried out in your own time; however you should write up/compile your findings under supervised conditions.

**Reporting on your investigation**

The summary of your investigation must:

* identify a relevant contemporary development and outline its main purpose, some important features and any applications (3.1)
* outline one technical challenge or area of current research related to the development (3.2)
* explain at least one legal and/or ethical implication of the development (3.3)
* describe and reflect on at least one area of impact of the development (3.4)

**Notes:**

1. You should use appropriate computing science terminology, you may include relevant diagrams, but must acknowledge all sources of information used.

2. There is no required word count, but a typical written summary should not need to run to more than two pages of text, or equivalent information in a slide presentation or other format.

3. The findings should be presented in a clear and well-structured format, but will be judged on their content rather than on style.

4. The information may be presented in a variety of formats. If presented as a slide presentation, the structure may be a title slide, a slide identifying the development with a description of its purpose, features and applications, one or two slides describing a related technical challenge, or current area of research, and a slide on each on a legal or ethical implication, an environmental, economic or social impact and a slide on your sources of information. In a slide presentation, a description may be presented as a list of appropriate bullet points.

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| *Successful completion of this activity will gain a pass for Outcome 3 of the Information Systems Design and Development Unit.* |