



Higher National Unit specification

General information for centres

Unit title: Web Development: Producing a Data Driven Website

Unit code: F6C4 35

Unit purpose: This Unit is designed to enable candidates to develop knowledge and skills to meet a client brief to develop a prototype database driven website.

On completion of the Unit the candidate should be able to:

- 1 Implement and test a prototype relational database from a client brief.
- 2 Design, implement and test a web interface with a data driven search facility.

Credit points and level: 1 HN credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: It is recommended that the candidate should have prior knowledge of a web authoring package. This may have been gained through successful completion of HN Unit F1VT 34 *Interactive Media: Authoring* or a similar Unit.

Core Skills: There are opportunities to develop the Core Skills of *Problem Solving* and *Communication* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

It is recommended that this Unit be delivered in conjunction with, prior to or following, an associated Unit such as *Data Analysis and Database Design*. An appropriate approach to integrated delivery of the two Units should be considered and this will probably take the form of a common case study or brief to be used for both Units either through the analysis and design of a prototype database required by the aforementioned Unit — followed by the implementation required by this Unit alongside/subsequently or through completion of this Unit prior to the delivery of *Data Analysis and Database Design*.

General information for centres (cont)

Assessment: Evidence is required that candidates have achieved all Outcomes.

Written and/or oral recorded, performance and product evidence is required which demonstrates that the candidate has achieved the requirements of all of the Outcomes to show that the candidate has appropriate knowledge and understanding of the content of this Unit.

This Unit should be assessed by the assessment tasks detailed as follows:

Outcome 1 is an open-book assessment and should take the form of a practical assessment carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in implementing and testing a prototype relational database from a client brief.

Outcome 2 is an open-book assessment and should take the form of a practical assessment carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in designing, implementing and testing a web interface with a data driven search facility.

It is recommended that the assessments for Outcomes 1 and 2 be integrated into one holistic assessment based on the same client brief.

Assessors should assure themselves of the authenticity of each candidate's submission.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Implement and test a prototype relational database from a client brief

Knowledge and/or Skills

- ◆ Analyse client brief
- ◆ Implement a prototype relational database from a data dictionary
- ◆ Structured Query Language (SQL)
- ◆ Test database functionality and revise as necessary

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can correctly analyse a client brief, implement and test a relational database.

A candidate's response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

- ◆ produce a requirements document/specification that includes an analysis of the client brief, requirements and objectives
- ◆ create a database structure using a data dictionary, and insert appropriate sample content to meet client/testing requirements
- ◆ utilise SQL to create and run a range of test queries
- ◆ produce a completed test plan showing evidence of problem solving and error correction

Assessment Guidelines

See Outcome 2.

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development: Producing a Data Driven Website

Outcome 2

Design, implement and test a web interface with a data driven search facility

Knowledge and/or Skills

- ◆ Create a detailed design specification
- ◆ Implement web interface to the agreed design specification
- ◆ Establish a database connection for search purposes
- ◆ Test the functionality of the website and revise where necessary

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can design, implement and test a web interface with a data driven search facility:

A candidate's response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

- ◆ produce a detailed design specification based on the requirements document produced for Outcome 1
- ◆ implement a web interface to meet agreed design specification
- ◆ connect the web interface to server side database using appropriate scripting language or built in database connection tools within a web authoring tool
- ◆ test, log and rectify where necessary the web interface search and results features

Assessment Guidelines

Outcomes 1 and 2 should be assessed by means of a project. The project should be given to the candidate in the form of a client brief or case study from which the candidate produces a requirements document, design documentation including navigation or site map and storyboards or wireframe subsequently producing the solution. The client brief should include a data dictionary setting out the database implementation requirements.

The client brief should be sufficient enough to allow the candidate to implement and test a prototype relational database and design, implement and test a web interface with a data driven search facility achieving all of the Evidence Requirements of Outcomes 1 and 2.

Assessment will be open book and should be completed individually. Assessors must assure themselves of the authenticity of each candidate's submission.

Administrative Information

Unit code: F6C4 35

Unit title: Web Development: Producing a Data Driven Website

Superclass category: CB

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History of changes:

Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Web Development: Producing a Data Driven Website

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit is intended to give candidates the knowledge and skills to undertake a defined project which involves implementing a software solution to meet a given brief. It is anticipated that the Unit would be delivered early in the second year of the HND programme as an introduction to developing an operational data driven prototype website. Depending on the centre's chosen delivery programme, it may be appropriate to use an authoring application in conjunction with a standard database application (eg Microsoft Office Access) rather than a more technical implementation such as SQL/PHP.

It is recommended that this Unit be delivered in conjunction with, prior to or following, an associated Unit such as *Data Analysis and Database Design*. An appropriate approach to integrated delivery of the two Units should be considered and this will probably take the form of a common case study or brief to be used for both Units either through the analysis and design of a prototype database required by the aforementioned Unit followed by the implementation required by this Unit or through completion of this Unit prior to the delivery of *Data Analysis and Database Design*.

If delivered stand-alone, it would be advantageous if the candidate were to be given a data dictionary relating to a relational database comprising no more than five tables, normalised to 3NF.

On completion of the Unit, the candidate should have developed and documented a software solution for the given problem. The solution need not be fully functional, but should be sufficient. The solution should be tested using a test plan and appropriate evidence generated.

Guidance on the delivery and assessment of this Unit

Outcomes 1 and 2 should be assessed by means of a project. Integration of Outcomes 1 and 2 will provide a holistic approach suitable for the production of a software product.

Centres should consider applying intermediate hand in dates for each stage of the project to emphasise the need to plan allocation of time and resources in order to successfully meet client requirements.

The candidate should adhere to relevant legislation (eg copyright, IPR, accessibility, etc).

The candidate should take steps to verify that the solution satisfies the specified requirements and design. This may include evidence to justify the choice of software for the implementation of the relational database and any impact this may have on the choice of software tool/authoring package to implement the dynamic website.

The candidate should debug the solution, reworking as necessary to satisfy the requirements set out within the specification. The candidates should be encouraged to make use of available debug tools as appropriate.

Higher National Unit specification: support notes (cont)

Unit title: Web Development: Producing a Data Driven Website

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Problem Solving* and *Communication* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Open learning

This Unit may be delivered by open or distance learning methods. The evidence for Outcomes 1 and 2 could be gathered in a portfolio (or electronic portfolio) to support the implemented web site which should be available to view and assess through a valid World Wide Web (www) address.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

General information for candidates

Unit title: Web Development: Producing a Data Driven Website

This Unit is designed to provide experience in analysing and meeting a client brief to design and implement a functional data driven website. It should provide you with the knowledge and skills required to establish requirements, choose appropriate software and deliver a suitable solution within a given timeframe.

Outcome 1

This Outcome requires you to analyse a client brief requesting the implementation of a simple data driven website. The ability to interpret information and obtain additional details if necessary is important before considering the relational database implementation process. Having created the structure of a relational database using appropriate software you will populate this database with sufficient sample data for testing purposes. You will use SQL to run a range of sample queries to database functionality and revise as necessary.

Outcome 2

This Outcome develops and reinforces knowledge and skills in designing an appropriate web interface.

In addition you will learn how to create a search and results facility using the database that you created in Outcome 1. You will produce a design specification comprising storyboards (or something similar) a planned navigation and a functional testing plan.

Next you will implement your web interface design which includes enabling a connection to the database and producing a search and results facility. You will probably use a web authoring application package to connect to a database and produce search queries. You will get the opportunity to access data from the database based on server side scripting and SQL.

Finally you will use the test plan to check the entire website's features work correctly and where necessary create a log of errors and steps taken to rectify them.

On completion of the Unit you should be able to:

- 1 Implement and test a prototype relational database from a client brief.
- 2 Design, implement and test a web interface with a data driven search facility.