

Model Assignment

Issued January 2008

OCR Level 2 Nationals in ICT

Unit 7: Databases - design and use

Please note:

This OCR model assignment may be used to provide evidence for the unit above. Alternatively, centres may wish to adapt this assignment or devise their own assignment for the purposes of assessment. It is the centre's responsibility to ensure that any adaptations made to this assignment allow candidates to meet all the assessment objectives and provide sufficient opportunity for candidates to demonstrate achievement across the full range of grades.

The scheme codes for these qualifications are:

OCR Level 2 National First Award in ICT	06324
OCR Level 2 National Award in ICT	06325
OCR Level 2 National First Certificate in ICT	06299
OCR Level 2 National Certificate in ICT	06276

The QCA Accreditation Number for this unit is:

Unit 7: Databases - design and use	D/500/2227
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This OCR model assignment remains live for the life of these qualifications.

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Model Assignment: Tutor Information

OCR Level 2 Nationals in ICT

Unit 7: Databases - design and use

Guidance For Centres

1 General

- 1.1 OCR model assignments are issued free to centres on approval and are available to download from our website: www.ocr.org.uk.
- 1.2 Centres may choose to:
 - use OCR model assignments for formal summative assessment of candidates
 - tailor OCR model assignments for formal summative assessment of candidates
 - use OCR model assignments as a benchmark for devising their own assignment.
- 1.3 This assignment has been designed to meet the full assessment requirements of the unit. Candidates will need to take part in a planned learning programme that covers the underpinning knowledge and skills of the unit.

2 Before carrying out the assignment

- 2.1 Candidates should be provided with a copy of the *Candidate Information* section of this booklet.
- 2.2 Candidates may carry out preparations prior to undertaking the tasks; there is no time limit for this.

3 When completing the assignment

- 3.1 Candidates should be allowed sufficient time to complete all of the tasks. The amount of time may vary depending on the nature of the tasks and the ability of individual candidates. It is suggested that evidence is produced in several sessions.
- 3.2 Each candidate must produce individual and authentic evidence for each task within the assignment.
- 3.3 Centre staff may give support and guidance to candidates. This support and guidance should focus on checking that candidates understand what is expected of them. It is not acceptable for tutors to provide model answers or to work through answers in detail.
- 3.4 Candidates may use information from any relevant source to help them with producing evidence for the tasks.
- 3.5 It is acknowledged that candidates in their responses may refer to situations in the scenario but as the scenario is fictitious this does not break any rules of confidentiality.

However, candidates must be guided on the use of information from other sources to ensure that confidentiality is maintained at all times.

4 After completing the assignment

- 4.1 Candidates' evidence is assessed by the centre's assessor against the qualification specification contained in the Centre Handbook. When grading candidates' work centres **must** use the grading descriptors in the unit. For further information about assessment please refer to the section on Assessment and Moderation in the Centre Handbook.
- 4.2 Assessors' decisions should be quality assured across the centre through internal moderation. For further information about internal moderation please refer to the section on Assessment and Moderation in the Centre Handbook.

5 Presentation of work

- 5.1 Candidates may use the *Candidate Checklist* provided to ensure that they submit evidence for ALL tasks. They can do this by using the *Candidate Checklist* as a contents page inserting references/page numbers in the boxes provided.
- 5.2 Centres may wish to discourage candidates from excessive use of plastic wallets for presentation of their evidence as this may hinder the assessment process. Instead centres may wish to encourage candidates to present their work so that it is easily accessible, eg spiral bound, stapled booklet, treasury tag.

6 Acceptable evidence

- 6.1 For guidance on generation and collection of evidence please refer to the section on Assessment and Moderation in the Centre Handbook.

7 Reworking the assignment

- 7.1 If candidates do not meet the minimum PASS requirements for the assessment objectives, further work will be required.
- 7.2 Tutors may give feedback to candidates to support and guide them in producing evidence to the required standard.

Notes For Tutors

Introduction to the Tasks

The tasks have been designed to enable candidates to design and construct a database for the scenario given in the Candidate Information section. Candidates will then add records, interrogate the database, create reports, create a user interface and finally test the database.

The tasks have been designed so that all of the assessment objectives in Unit 7 are addressed. The tasks are designed to be completed in sequence.

Please note candidates are not provided with a database in this task, nor should they be provided with one by the tutor as the assessment objectives require candidates to design, then construct the database.

Tutors may, however, provide candidates with data in generic file format (eg .csv, .txt) to reduce the need for candidates to enter large amounts of data. If doing so, the generic datafile must not contain the exact information required for the given scenario so that candidates can extract and/or add to the information appropriate to their design. It is not acceptable for tutors to provide the exact number of fields and records that candidates will need.

Evidence for tasks 2, 3, 4 and 5 may be supplied in hard copy format, but would also be appropriate in electronic format.

These guidance notes should be used in conjunction with the unit specification and Centre Handbook.

The Tasks

Task 1: Design a relational database to meet the needs of the organisation

Assessment Objective 1 is assessed in this task.

Candidates must produce a design on paper for a relational database consisting of at least two related tables. However it is likely that many candidates will choose to create three tables, eg patient details, staff details and appointments.

Tutors may have a discussion with candidates about their designs. Tutors may check that the designs created will allow candidates to fulfil the assessment objectives in other tasks, for example interrogate the database, create reports and create a user interface.

Tutors should stress to candidates the importance of producing their designs **before** they start creating the database. It is not acceptable for candidates to produce screenshots or printouts from their database.

Task 2: Construct the database according to the design

Assessment Objective 2 is assessed in this task.

Referring to their designs from Task 1, candidates must produce a functional database. They must add at least 20 records to each table. It is not necessary for candidates to use the form(s) to

enter all records. The functionality of the form(s) could be evidenced during testing in Task 6.

Although the distinction criteria require that the database will match exactly the design work undertaken, candidates should not be penalised for improving on their initial design, provided that they document their reasons. Candidates should be discouraged from amending their design work.

Task 3: Create queries to search and sort data

Assessment Objective 3 is assessed in this task.

Note: complex criteria queries could include the use of **and**, **not**, **or**, **between** or **parameters**.

Pass level candidates are only required to produce a simple query and a query using multiple criteria. However they should not be penalised if both queries use multiple criteria. Similarly candidates should not be penalised for using complex criteria in one or both of their queries.

Task 4: Create reports

Assessment Objective 4 is assessed in this task.

Candidates will produce reports for each query created in task 3. Pass level candidates may use standard report templates from within the software. Merit level candidates must use at least one custom report and distinction level candidates must use a range of different custom reports.

The range of report styles that could be used might include, eg columnar, tabular, grouped, labels, charts.

Task 5: Create a user interface

Assessment Objective 5 is assessed in this task.

Using their created database, candidates should create a user interface, giving the user access to various parts of the database eg forms and reports. This could take the form of a switchboard, menu or customised form, making use of a range of macros.

Task 6: Test the database

Assessment Objective 6 is assessed in this task.

For this task, candidates must create and use a test plan/table or test checklist. They must decide which areas of the database they will test. It is not acceptable for tutors to provide candidates with a test plan that identifies the tests to be carried out.

Tutors may wish to advise candidates to create a backup copy of their database before they carry out the testing to ensure that they have evidence of the improvements that they have made to the functionality of their database.

Candidates will carry out each test and record the result on the test table. They are not required to produce screen shots as evidence of the testing. If a test identifies any issues concerning the functionality of the candidates' database, they should make the necessary changes.

Witness Statement – Task 6

AO6 Test the database

This witness statement may be used to verify that candidates have tested their database and found no problems

CANDIDATE NAME	
ASSESSOR NAME	
Date of presentation	

ASSESSOR FEEDBACK

Task 6	Comments

FEEDBACK TO CANDIDATE

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AREAS FOR IMPROVEMENT

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ASSESSOR SIGNATURE:		DATE:	
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CANDIDATE SIGNATURE:		DATE:	
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Model Assignment: Candidate Information

OCR Level 2 Nationals in ICT

Unit 7: Databases - design and use

CANDIDATE NAME: _____

General Information for Candidates

Q *Do I have to pass this assignment?*

A Yes. You must pass this assignment to achieve the full qualification.

Q *What help will I get?*

A Your tutor will help you when completing the OCR model assignment and will make sure that you know what resources/facilities you need and are allowed to use.

Q *What if I don't understand something?*

A It is your responsibility to read the assignment carefully and make sure you understand what you need to do and what you should hand in. If you are not sure, check with your tutor.

Q *Can I copy other people's work?*

A No. The work that you produce must be your own work and you may be asked to sign a declaration to say that the work is your own. You should never copy the work of other candidates or allow others to copy your work. Any information that you use from other sources, eg books, newspapers, professional journals, the Internet, must be clearly identified and not presented as your own work.

Q *Can I work in a group?*

A Yes. However, if you work in a group at any stage you must still produce work that shows your individual contribution.

Q *How should I present my work?*

A You can present your work in a variety of ways, eg hand-written, word-processed, on video. However, what you choose should be appropriate to the task(s). For some work, eg presentations, coaching sessions, role-play, work experience, you will need to provide proof that you completed the task(s). A witness statement or observation sheet could be used for this. If you are unsure, check with your tutor.

Q *When I have finished, what do I need to hand in?*

A You need to hand in the work that you have completed for each task. Do not include any draft work or handouts unless these are asked for. When you hand in your work make sure that it is labelled, titled and in the correct order for assessing.

Q *How will my work be assessed?*

A Your work will be marked by an assessor in your centre. The assessor will mark the work using the assessment objectives and the grade descriptors in the qualification specification.

Scenario

Family Care Medical Practice

You are on a training scheme to become an ICT Consultant. As part of your training, you are required to provide ICT support to a medical practice. The Practice Manager wants to introduce a range of new ICT systems and procedures to help improve efficiency and to cut costs.

At present, patient records are stored in individual envelope folders, which are stored in filing cabinets and categorised alphabetically. Records of current employees are stored in card folders and stored in box files in the surgery office. . .

The surgery has a number of part-time and full-time staff including:

- doctors
- nurses
- dieticians
- chiropodists
- chiropractors
- paediatric nurses
- health visitors
- receptionists.

You need to create a database for the surgery. This needs to store details of

- patients
- staff
- appointments.

You will need to use a number of related tables in your database. You must ensure that your database will enable the staff to record and find the information they require.

The surgery staff would like the database to help them with a number of tasks such as:

- send out reminders to specific groups of patients eg vaccinations
- book appointments
- check staff availability
- find patient and staff contact details quickly
- print out appointment lists for individual staff
- produce address labels for particular groups of patients.

The Practice Manager would like some designs on paper, for approval, before you begin to construct the database.

Once your plan has been approved you will need to create the database. You will then create appropriate queries and reports. You will need to make the database easy to use by creating a user interface. Finally you will need to create a test plan to test your database, carry out the tests, record any problems and correct if necessary.

Tasks

Task 1: Design a relational database to meet the needs of the organisation

Assessment Objective 1

You need to produce design plans for a relational database with related tables. Your designs must be appropriate for the Family Care Medical Practice scenario on pages 13-14.

You may produce your plans by hand or using ICT, but at this stage, you must not start creating the database. You may have a discussion with your tutor about the initial planning (eg. discuss suitable table structures, field headings etc).

Important note: in Task 3, you will need to search the database. When you design the table structures, field headings, data types etc in this task, you should ensure that you will be able to construct suitable queries.

Use the activities below to produce evidence for your assignment.

A Refer to the scenario on pages 13-14 to identify the user requirements.

Produce a design for a relational database which will consist of two or more related tables. Ensure that the tables will be appropriate for the medical practice's needs. Your design should include:

- the tables needed
- primary keys
- fields for each table showing the intended field names, data types and field lengths for all fields
- the relationships between the tables
- combo boxes and validation rules to be used (higher levels only)
- at least one input mask (distinction level only).

The amount of detail in your plans will be important in determining your grade for this assessment objective.

(Evidence could be hand-written or word-processed).

B In Task 2, you will need to create at least one data entry form.

As part of the design process, in this task you will decide how many, and the layout of, forms you intend to create.

For Pass level, you must design a single form for one table. It is sufficient for you to specify options on a wizard or template provided by your database software.

To achieve Merit level, you must design a form for **each** table. It is sufficient for you to specify options on a wizard or template provided by your database software.

To achieve Distinction level, you must design a **customised** form for **each** table. You may base your design on wizards or templates provided by your database software if you wish. You must show clearly how you will customise each form.

(Evidence could be sketches drawn by hand or on computer).

Task 2: Construct the database according to the design

Assessment Objective 2

You will now use your designs from Task 1 to create a functional database.

Use the activities below to produce evidence for your assignment.

A You will need to create the database according to your design, including:

- the structure for each table
- relationships
- form(s)
- at least 20 records in each table.

The extent to which your database reflects your design work will be important in determining your grade for this assessment objective. If you need to deviate from your original plans there is no need to go back and change your plans but you need to explain why you have made these changes.

(Evidence could be the electronic file or

- *screenshots of the database table design views showing field names, data types, field lengths and relationships. For higher levels, screenshots should also show validation rules and input mask(s)*
- *printouts or screenshots of the form(s)*
- *printouts of each table*

If supplying the electronic file, you must ensure that you do not have any unwanted/incorrect tables and/or forms in the database).

Task 3: Create queries to search and sort data

Assessment objective 3

Using your database from Task 2, you will need to create and use queries to search the database and sort data.

You will need to describe the purpose of the queries, so before you construct each query, think about what you are going to search for and make sure it will be appropriate for your users.

Use the activities below to produce evidence for your assignment.

A For Pass level, carry out one simple query and one query using multiple criteria on linked tables and sort one of these queries.

To achieve Merit level, carry out two queries on linked tables: one of your queries must use multiple criteria and one must use complex criteria (NOT, OR, BETWEEN or parameters). Sort one of these queries on one field and the other on more than one field. All your queries must be appropriate.

To achieve Distinction level, carry out three appropriate queries on linked tables: one of your queries must use multiple criteria and the other two must use complex criteria (NOT, OR, BETWEEN or parameters). Sort one of these queries on one field and another on more than one field. All your queries must be appropriate.

(Evidence could be:

- *the electronic file containing the relevant queries*
or
- *screenshots of the query design showing fields displayed, search criteria and sorted fields and printouts of the query results showing all data in full.*

If supplying the electronic file, you must ensure that you do not have any unwanted/incorrect queries and that your queries are suitably named.)

B Describe the purpose of each of your queries.

For higher levels, you should also explain why each of the queries you have used is appropriate to the user's needs.

(Evidence may be a written or word-processed statement. Alternatively, you could annotate your query printouts).

Task 4: Create reports

Assessment objective 4

In this task you will use your saved queries from Task 3 to produce appropriate reports for the Family Care Medical Practice.

Use the activities below to produce evidence for your assignment.

For each query that you created in Task 3, produce a report in an appropriate report style. Ensure that you display appropriate fields in each report.

For a Pass level, you should use a different style for each report. You may use templates/wizards.

To achieve Merit level, you must customise at least one existing report or create your own custom report. For the other reports, you may use the report templates in the software.

To achieve Distinction level you must customise all your reports using a range of different report styles.

(Evidence could be the electronic file containing the relevant reports or

- *printouts of all reports displaying all data in full*
- *screenshots of customising reports (Merit and Distinction only)*
- *annotations on the printouts of the custom reports (Merit and Distinction only).*

If supplying the electronic file, you must ensure that you do not have any unwanted/incorrect reports and that all data will be fully displayed when the reports are viewed in print preview. Your reports should be suitably named.)

Task 5: Create a user interface

Assessment objective 5

In this task you need to create an interface for the staff at Family Care Medical Practice who will use the database. You need to make the opening screen clear and easy for the users. Your interface could take the form of a switchboard, menu or customised form, making use of a range of macros.

Use the activities below to produce evidence for your assignment.

Using the database you have created for this assignment, create a user interface that will give the staff access to the main parts of the database eg the forms and reports you have created. You may use a wizard or template provided by your software but to achieve a Distinction you must fully customise your interface.

For Pass level, your user interface must give users access to at least some areas of the database.

To achieve Merit level, your user interface should be clearly structured, with elements in a logical order, and should give users access to the main areas of the database.

To achieve Distinction level, you should implement a fully customised and easy-to-use user interface that will give access to all the main areas of the database.

(Evidence could be an electronic copy of the database or screenshots of the user interface screen(s).)

Task 6: Test the database

Assessment objective 6

In this task, you will need to test your database. Before you do, you need to create a test plan. You need to decide which areas of your database you will test. You do not need to produce screenshots as evidence of the testing but you must record the results. If you identify any problems during the testing, you are expected to make the changes necessary to improve how your database works. If you do not identify any problems, you must record this. However, if problems are then found in your database, this will affect your grade for this assessment objective.

Use the activities below to produce evidence for your assignment.

- A** Create a test plan to show details of the areas of the database you will test, how you will test each element and what you expect to happen when the test is carried out.

Your test plan should include the following checks:

- database meets original design brief
- validation rules (if any)
- input masks (if any)
- links
- forms
- queries
- reports
- user interface.

For Pass level, your test plan should include details of testing some areas of the database.

To achieve Merit level, your test plan should include details of testing most of the main areas of the database.

To achieve Distinction level, your test plan should include details of tests for all the main areas of the database.

The range of areas to be tested will be important in determining your grade for this assessment objective

(Evidence will be a test plan.)

- B** Carry out the tests and record each result.

(Evidence will be a record of test results.)

- C** If a test identifies any issues that affect how the database works, make the changes needed to improve the database.

(Evidence could be 'before and after' screenshots or electronic files of the original database and the amended database. If you do not find any errors during testing, and you are not supplying the electronic file, you could ask your tutor to provide a witness statement to verify that all aspects of your database work as they should.)

Model Assignment: Candidate Checklist

OCR Level 2 Nationals in ICT

Unit 7: Databases - design and use

CANDIDATE NAME: _____

For task 1 (AO 1) have you:	Completed (✓)
A produced a design for a relational database? shown the planned structure for each table?	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> written or word processed notes	
<input type="checkbox"/> or other (please give details _____)	

For task 1 (AO 1) have you:	Completed (✓)
B designed at least one form? designed one form for each table? (Higher levels only) shown how you will customise your forms? (Distinction only)	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> written or word processed notes	
<input type="checkbox"/> sketches	
<input type="checkbox"/> or other (please give details _____)	

(continued overleaf)

For task 2 (AO 2) have you:	Completed (✓)
created the database?	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> electronic file	
<input type="checkbox"/> screenshots of the table designs	
<input type="checkbox"/> screenshots of relationships between tables	
<input type="checkbox"/> screenshots/printouts of form(s)	
<input type="checkbox"/> printouts of records in each table	
<input type="checkbox"/> or other (please give details_____)	

For task 3 (AO 3) have you:	Completed (✓)
A created at least two queries? created at least three queries? (Distinction only)	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> electronic file	
<input type="checkbox"/> screenshots of query designs	
<input type="checkbox"/> printout(s) of query results	

For task 3 (AO 3) have you:	Completed (✓)
B described or explained the purpose of your queries?	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> written or word processed notes	
<input type="checkbox"/> annotated printouts of queries	
<input type="checkbox"/> or other (please give details_____)	

(continued overleaf)

For task 4 (AO 4) have you:	Completed (✓)
produced a report for each query? customised at least one report? (Merit only) customised each report? (Distinction only)	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> electronic file containing the relevant reports <input type="checkbox"/> printouts of all reports displaying all data in full <input type="checkbox"/> screenshots of customising reports (merit and distinction level) <input type="checkbox"/> other (please give details)_____	

For task 5 (AO 5) have you:	Completed (✓)
created a user interface?	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> electronic file containing the user interface <input type="checkbox"/> screenshots of the user interface screen(s)	

For task 6 (AO 6) have you:	Completed (✓)
A created a test plan?	
Evidence provided (please ✓):	Ref/Page no(s)
evidence will be provided by the completed test plan(part B)	

For task 6 (AO 6) have you:	Completed (✓)
B carried out the tests?	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> completed test plan <input type="checkbox"/> or other (please give details)_____	

(continued overleaf)

For task 6 (AO 6) have you:	Completed (✓)
C corrected any problems in your database found during testing?	
Evidence provided (please ✓):	Ref/Page no(s)
<input type="checkbox"/> electronic file of final version of the database <input type="checkbox"/> 'before and after' screenshots <input type="checkbox"/> witness statement <input type="checkbox"/> or other (please give details _____)	