

Edexcel GCE

Applied Information and Communication Technology

Unit 7: Using Database Software

23 May – 17 June 2011 (excluding 30 May – 3 June 2011)

Assessment Window: 3 weeks

Time: 10 hours

Paper Reference

6957/01

You must have:

Short treasury tag, Films_exam.txt, Members_exam.txt,
Cover sheet

Instructions

- Complete your candidate details on the cover sheet provided.
- All printouts must contain your name, candidate number, centre number and activity number.
- At the end of the examination:
 - All printouts should be placed in the correct order.
 - Use a treasury tag to attach your printouts (**as shown**) to Page 2 of the cover sheet.

Information

- The total mark for this paper is **90**. There are **six** activities in this examination totalling 88 marks. 2 further marks are allocated to Standard Ways of Working.
- The marks for **each** question, within an activity, are shown in brackets
 - use this as a guide as to how much time to spend on each question.
- Use relational database software to carry out the database activities in this examination.
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
 - you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

- Read through the Scenario carefully.
- Work through the activities in order.
- Attempt **ALL** activities.
- Label your printouts clearly as instructed.
- Printing must be undertaken within the examination time.

Turn over ►

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Scenario

Moreshire School Cinema Club

Charlotte Spencer attends Moreshire School. She enjoys watching films at the cinema. She knows that many other students enjoy the cinema too.

The school runs clubs on Wednesday afternoons. At the beginning of the last school year the students were asked if they had any ideas for new clubs. Charlotte thought a cinema club would be popular. Charlotte's idea was voted one of the top ten and the club has now been running for a year. The club organises group visits to the cinema and collects reviews from the students afterwards.

Charlotte is responsible for the club records. These include details of the films that students have seen, what they thought and their payment records. At the moment these are handwritten and Charlotte keeps losing them or making mistakes. For example, she asks for money from members who have already paid for a film or for a review of a film they have not seen.

This is where you come in. Charlotte knows you are studying ICT and she thinks you would be able to develop an IT-based solution. In the first instance it has been agreed that you will design and build a **prototype** relational database system that will focus on four tasks. The final system will be based on your evaluation of the prototype and your recommendations for further functionality.

These are the tasks.

1. Registration

Charlotte wants the students to be presented with a registration screen, which will allow them to apply to join. The registration process should include:

- checking that they are old enough to join
- the generation of a unique username, which combines letters from the student's name with a sequential number that is always one more than the highest currently in use
- storing the member details if all requirements are met. A default password (teapot) should be set
- displaying messages to the user so they know what is happening.

2. Login

Charlotte wants the members to be able to log in. Only some aspects of the login process will be implemented in this prototype version. The login process should include:

- members entering their username and password
- checking that the username and password are valid
- a warning if the default password has not been changed
- a successful login message if the details are present and valid.

3. **Tracking payments**

This is a task of Charlotte's. The members have to pay £10 for each film and Charlotte collects the money. Members can make more than one payment per film if they want to spread the cost but the payments must be between £3 and £10. The payment tracking process should include:

- selecting a member and film
- entering the amount paid
- automatically assigning the payment date
- storing the payment details
- providing a suitable message for Charlotte so that she knows what is happening.

4. **Printing film reviews**

Charlotte should be able to print film review reports.

Instructions to Candidates

All word processed documents **MUST** have a header and a footer. The header must contain the activity number. The footer must contain your name, candidate number and centre number.

Minimum font size of 10 should be used throughout.

Screen prints should be large enough to be easily read.

All database reports must have the activity number, your name, candidate number and centre number in the page header.

Activity 1 – Understanding the situation (suggested time 30 mins)

Relational databases can be used by many people who need to carry out different tasks.

- (a) Use a word processor to create a copy of this table. Put a cross in the appropriate cell to show who carries out each task.

(3)

Task	Administrator – Charlotte	Potential Member	Member
Register			
Review a film			
Track payments			
Print film reviews			

- (b) Identify **two** ways of preventing members and other students accessing Charlotte's tasks and briefly explain why each would be suitable.

(4)

A good database will minimise data entry wherever possible.

- (c) Use a word processor to create a copy of the following table, which lists the steps in the tracking payments task. The steps are not in the correct order.

For each step identify whether it is an input to the system, something that is automatically generated or an output from the system.

(3)

Process	Input	Generated	Output
Add amount paid			
Add payment date			
Display messages			
Select film			
Select member			
Store payment details			

Evidence to be submitted for Activity 1.

On one sheet of A4 paper:

- Completed table for part (a).
- Word processed answer for part (b).
- Completed table for part (c).

(Total for Activity 1 = 10 marks)

Activity 2 – Structure (suggested time 2 hours)

You will need to use the data files **Films_exam.txt** and **Members_exam.txt**

These are provided in your examination area.

Study the data files.

(a) Create an efficient database structure that minimises data duplication.

Screenprint your relationship diagram.

(8)

(b) Use the correct data types and key fields.

Produce screen prints in **DESIGN** view of each of your tables showing **ONLY** the field names, data types and primary keys.

(3)

(c) An efficient database must include suitable validation.

Note: you can use the same field more than once if appropriate.

(i) Screenprint **ONE** example of a **Format Check** on an appropriate field. Ensure you can clearly see the field it is applied to and the format.

(1)

(ii) Screenprint **ONE** example of a **Range Check** on an appropriate field. Ensure you can clearly see the field it is applied to and the range specified.

(1)

(iii) Screenprint **ONE** example of a **Presence Check** on an appropriate field. Ensure you can clearly see the field it is applied to.

(1)

(iv) Screenprint **ONE** example of a **List Check** or **Table Lookup** on an appropriate field. Ensure you can clearly see the field it is applied to and the list items or row source.

(1)

(v) Screenprint **ONE** example of a **Default Value** on an appropriate field. Ensure you can clearly see the field it is applied to and the default value.

(1)

(d) Import the data from the text files provided into your database.

Screenprint each table, showing **ONLY** the first five records and record count.
(If the number of fields is too big to fit on the width of the page, all the fields do not have to be displayed.)

(4)

You must assemble your screenprints in the order you were asked to complete them.

(Total for Activity 2 = 20 marks)

Activity 3 – Dealing with registration, login and tracking payments (suggested time 4 hours)

- (a) A registration form is needed so that students can submit a membership request.
- (i) Create a data entry form for students to use that does not display information about existing members. The form should collect a student's name, address and date of birth. (1)
 - (ii) Calculate the age of the potential member and display it on the form. (1)
 - (iii) Generate the UserName and display it on the form. The UserName consists of the first three letters of the FirstName, the first two of the LastName and a sequential number one higher than the last number. (4)

Screenprint the form in **DESIGN** view.

It does not need any annotations.

- (iv) Customise the form to make it easier to use. (2)

Screenprint the form in **FORM** view.

It does not need any annotations.

- (b) An automated method of saving the new member record is required.

Create an automated method of saving the student's details. The process must start by clicking a Create Account button.

The record should be saved if:

- the student is 15 years of age or older
- they have included all relevant details.

There should be a message to indicate that the record has been saved successfully and the data cleared from the form so that it is ready for the next student.

The record should **not** be saved if:

- the student is under 15
- they have not included all relevant details.

Suitable error messages should be produced.

Screenprint in **DESIGN** view any macros, code and/or queries you have used.

Ensure that the detail can be seen in full. (8)

- (c) A payment form is needed so that Charlotte can add details of payments.

- (i) Create a data entry form for Charlotte to use to add payments. Charlotte should be able to select the UserName, the FilmID, and enter the AmountPaid. (1)

(ii) Generate the new PaymentID, which is always one number higher than the last, and display this on the form. (1)

(iii) The payment date should be automatically set to the current date. (1)

Screenprint the form in **DESIGN** view.

It does not need any annotations.

Ensure that the detail can be seen in full.

(iv) Customise the form to make it easier to use. (1)

Screenprint the form in **FORM** view.

It does not need any annotations.

(d) An automated method of saving the payment details is required.

Create an automated method of saving the payment details. The process must start by clicking a save button. There should be a message to Charlotte when the save has been carried out.

Screenprint in **DESIGN** view any macros, code and/or queries you have used. Ensure that the detail can be seen in full. (3)

(e) A form is needed that allows a member to log in.

(i) Create a login form that would allow a member to enter their username and password. (1)

(ii) Create an automated method to check the username and password that has been entered. The process must start by clicking a login button.

When the user clicks the login button:

- an error message should appear if either the username, password or both is not present
- an error message should appear if the username is not in the database or if the password does not match the one stored in their record
- a message should appear telling the user the password needs changing if the current password is 'teapot'
- a message should appear telling the user they are logged in if the username and password are correct and the password is not teapot.

Screenprint the form in **DESIGN** view.

It does not need any annotations.

Screenprint in **DESIGN** view any macros, code and/or queries you have used.

Ensure that the detail, including any messages, can be seen in full. (8)

(Total for Activity 3 = 32 marks)

Activity 4 – Testing (suggested time 30 mins)

(a) Use the registration form you created in Activity 3 to register this student.

Shelley Crowther
133 Seymour Gardens
Heartfield
Moreshire
HE3 4EE
DOB: 01/08/1995

(i) Enter the data into the registration form and screenprint in **FORM** view. (1)

(ii) Save the member details and show:

- a screen print of the message that appears when the record has been saved
- a screen print of the members' table showing the new record.

(2)

(b) Enter the details of this potential new member on the registration form:

Jason Ahmed
23 The Grove
Heartfield
Moreshire
HE3 4EP
DOB: 15/06/1998

Click the Create Account button.

Produce a screen print in **FORM** view showing the data entered and any message displayed.

(1)

(c) Use the payment form you created in Activity 3 to enter and save this payment:

UserName: spech4266
FilmID: 1234
AmountPaid: £4

(i) Enter the data into the payment form and screenprint in **FORM** view. (1)

(ii) Save the payment details and show:

- a screen print of the message that appears when the record has been saved
- a screen print of the new record in the payment table.

(2)

(Total for Activity 4 = 7 marks)

Activity 5 – Printing film reviews (suggested time 2 hours)

NOTE: the tasks in this activity require you to produce a report. The activity number, your name, candidate number and centre number should be in the page header for the report. (You need to modify your report in DESIGN view to do this.)

Charlotte would like to be able to print a report that shows the film details and reviews for the months January to April only. This report should be fit for purpose.

(a) Create a query that will find the films and reviews for the specified months.

For each month, the query should include:

- the film information
- the names of the members who submitted reviews
- the comments from their reviews
- the star rating they gave the film.

Screenprint the query in **DESIGN** view, making sure the criteria are fully visible.

(1)

(b) (i) Create a report based on the query.

The report should be grouped appropriately and have a suitable title in the page header.

(2)

(ii) Ensure that the group header shows:

These fields:

- FilmMonth
- FilmID
- Title
- Genre.

These labels:

- FirstName
- LastName
- Comments
- StarRating.

(2)

(iii) Ensure the detail section shows these fields:

- FirstName
- LastName
- Comments
- StarRating.

(1)

(iv) Ensure the group footer section shows:

- the number of reviews made
- the average star rating.

(3)

(v) Format the report.

(1)

Screenprint the report in **DESIGN** view.

Print the database report.

Evidence to be submitted.

- A screen print of the query in **DESIGN** view.
- A screen print of the database report in **DESIGN** view.
- The printed database report.

(Total for Activity 5 = 10 marks)

***Activity 6 – Evaluation (suggested time 1 hour)**

You need to evaluate the prototype you have produced.

In a word processed report:

- evaluate your prototype. This must be an evaluation of how well it carries out the tasks identified in the scenario, rather than a commentary of what you have done or your own performance in doing it.
- discuss your recommendations for further functionality. In the scenario you were told that your system was to be the first prototype and that it would only carry out certain tasks. In this section of the evaluation describe what else you think the fully functioning version should do.

Marks will be awarded for the Quality of your Written Communication (QWC).

(Total for Activity 6 = 9 marks)

Standard Ways of Working

All printouts must contain the activity number, your name, candidate number, and centre number.

Pages must be securely fastened to the cover sheet and in the correct order.

A minimum font size of 10 should be used for all word processed documents.

(Standard Ways of Working = 2 marks)

TOTAL FOR PAPER = 90 MARKS

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