

# Pearson Edexcel GCE

## Applied Information and Communication Technology Unit 7: Using Database Software

9 – 27 May 2016

**Assessment window: 3 weeks**

**Time: 10 hours**

Paper Reference

**6957/01**

### You must have:

Cover sheet, short treasury tag, Competition\_exam.txt, Logo.png

### 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. Two 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.

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## Scenario

### Inter School Music Competition

The Inter School Music Competition is a yearly event where students showcase their musical talents.

Secondary schools and further education colleges across the UK can choose to take part. They can enter as many acts as they want. Acts can be bands or solo artists. Teachers administer the competition at their own establishment. Simon Tipper, the lead judge, manages the entire competition.

The competition is split into rounds. An act can only progress to the next round if at least three out of four judges vote for the act to continue. Teachers upload videos of the acts from their establishment onto the Inter School Music website for the judges to watch and vote on. Teachers and students from other establishments can also view these videos.

In the final round each judge and establishment votes for their favourite act. Prize money is awarded to the establishments of the top three acts.

Currently, Simon uses a paper-based system to manage the competition. He realises this is not a very efficient or accurate system. It has been agreed that you will design and build a prototype relational database system.

Simon has thought of a range of possible tasks that could be included in the prototype.

Possible tasks are:

- registering establishments
- registering teachers
- registering acts
- setting up and managing rounds
- keeping track of videos
- recording votes
- printing certificates
- allocating prizes.

The final system will be based on your evaluation of the prototype and your recommendations for further functionality.

### 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 must be used throughout.

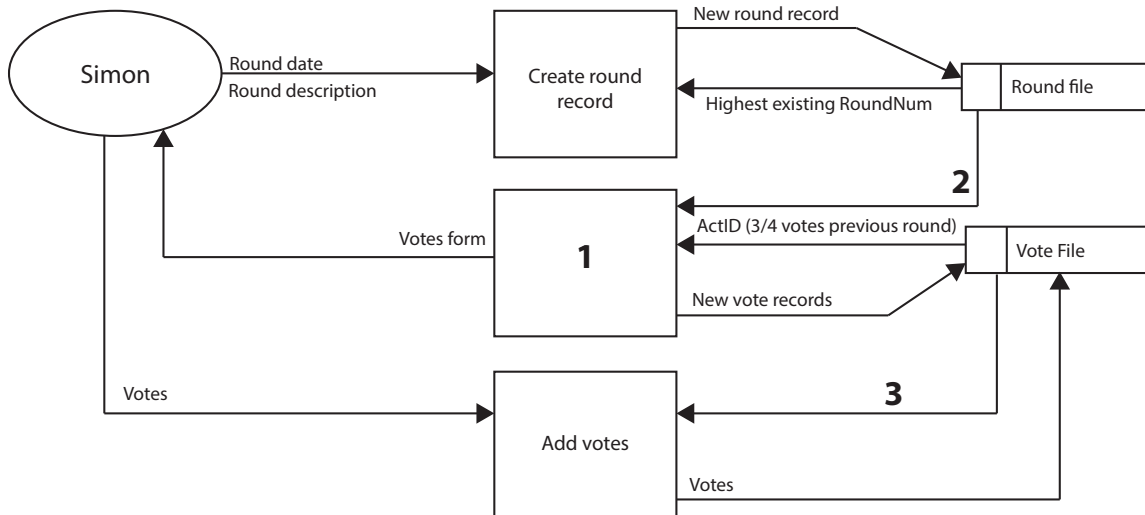
Screen prints must be large enough to be easily read.

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 minutes)

(a) Study this level 1 data flow diagram.

The labels 1, 2 and 3 show where the information is missing.



Use a word processor to create a copy of this table.

Identify the missing information for each number.

1	
2	
3	

(3)

(b) Use word processing software to answer this question.

Explain why data flow diagrams are useful when designing a database.

(4)

**Evidence to be submitted for Activity 1**

On **one** side of A4.

- Your completed table for part (a).
- Your word processed answer for part (b).

**(Total for Activity 1 = 7 marks)**

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## Activity 2 – Structure (suggested time 2 hours)

You will need to use the data file **Competition\_exam.txt**

This is provided in your examination area.

Study the data file.

- (a) Create an efficient database structure that minimises data duplication. Ensure you use all and only the fields provided.

Screenprint the relationships in your database, making sure that the table names, fields and relationships can be seen clearly.

(11)

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

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

(3)

- (c) A teacher's email address must follow a certain format.

It must contain in this order:

- one or more characters
- an @ symbol
- one or more characters
- a full stop
- one or more characters.

Create a **Format Check** using a **validation rule** on the TeacherEmail field in the relevant table to ensure only a valid email address can be input.

Screenprint the validation rule. Ensure you can clearly see the field it is applied to and the full validation rule.

(1)

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

(1)

- (e) Screenprint **ONE** example of a **Table Lookup** on a foreign key. Ensure you can clearly see the field it is applied to and the list items or row source.

(1)

- (f) Import the data from the text file provided into your database.

Screenprint each table showing **at least five** records, or all records if there are fewer than five, and the **full record count**. (If the fields are too wide to fit on one page, truncated data is allowed.)

(6)

**You must assemble your screen prints in the order you were asked to complete them.**

**(Total for Activity 2 = 23 marks)**

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**Activity 3 – Dealing with registering teachers, generating rounds and adding votes  
(suggested time 4 hours)**

(a) A form is required that will allow Simon to register a new teacher.

(i) Create a data entry form for Simon to use.

For each teacher the form should:

- collect their name
- collect their email address
- allow the selection of their establishment.

(2)

(ii) A TeacherID is a sequential eight digit number one higher than the number currently used.

Generate the TeacherID.

Screenprint the form in **DESIGN** view.

It does not need any annotations.

Ensure you show how the TeacherID is generated and displayed as eight digits.

(2)

(iii) Customise the form to make it easier to use.

Screenprint the form in **FORM** view.

(1)

(b) An automated method of saving a new teacher record is required.

Create an automated method of saving a teacher's details.

The automated method of saving should:

- ensure the teacher's name is present
- ensure an email address is present
- ensure the teacher's establishment is present
- include a message to indicate the record has been saved.

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

Ensure the detail can be seen in full.

(2)

(c) A menu and input form are required so that Simon can click a button to automatically add a round and open the input form ready for the votes.

(i) Create a menu and button for Simon to use.

The button should clearly indicate what it does. The button should not have any actions attached to it yet.

Screenprint the menu in **FORM** view.

It does not need any annotations.

(1)



(ii) An automated method is required for the button.

Create an automated method, which **must not** require the use of a new form.  
The method must:

- generate the round number
- request the input of the round date
- request the input of the round description
- automatically add new records for each act in that round to the relevant table.

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

Ensure the detail can be seen in full.

(5)

(iii) A single form, with no subform, that allows Simon to input the votes for each act for this round is required.

It should:

- show the round number only once
- show the names of the acts in ascending order
- allow the input of votes for all acts on the same form
- calculate the total number of votes in the round.

Screenprint the form in **DESIGN** view.

It does not need any annotations.

Screenprint the form in **FORM** view.

It does not need any annotations.

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

(4)

(iv) The menu button now needs to have actions attached to it.

It should trigger the automated process of:

- adding a round and new records, created in (ii)
- displaying the vote input form, created in (iii).

Screenprint the properties of the button.

Screenprint in **DESIGN** view any macros or code you have used. Ensure the detail can be seen in full.

(3)

**(Total for Activity 3 = 20 marks)**

#### Activity 4 – Testing (suggested time 1 hour)

(a) Enter the details of this teacher on the relevant form you created in Activity 3:

Teacher: Sangeetha Rajan

Email address: SangeethaRajan@StCatherines.com

Establishment: 1

Produce:

- a screen print of the completed form in **FORM** view
- a screen print of the relevant table showing the new record.

(2)

(b) Enter the details of this teacher on the relevant form you created in Activity 3:

Teacher: Jonathan Kepke

Email address: JonathanKepkeBarnmouthFE.com

Establishment: 13

Produce a screen print of the form showing the data and the message that appears.

(1)

(c) (i) Click the button on the menu you created in Activity 3.

Enter the round date: 22/04/2016

Screenprint this input.

Enter the round description: Final Round

Screenprint this input.

(1)

(ii) Enter these votes into the relevant form.

ActID	ActName	Votes
39	Beulah Harris	8
85	Cecilia Torres	0
110	Criminals Shock	1
67	Frankie Murray	2
95	Geoffrey Willis	0
44	Herbert Myers	3
79	Jacob Walters	1
89	Joanna Abbott	0
31	Lamar Harvey	1
72	Madeline Phelps	0
111	Prize Hive	1
37	Ramiro Quinn	1
84	Ruby May	0
4	Terrestrial Glue	0
108	Tyrone Newton	1

Produce:

- a screen print of the completed form in **FORM** view
- screen prints of the new records in the relevant tables.

(6)

**(Total for Activity 4 = 10 marks)**

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### Activity 5 – Printing certificates (suggested time 1 hour)

**Note: this activity requires you to produce a database 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.)**

Simon wants to print out certificates for the three acts that received the most votes in the final round. He has provided a design with a key for you to follow.



#### Key

1. Insert the logo. You will need to use the image **Logo.png** provided in your examination area.
2. Automatically insert the act name.
3. Automatically insert the establishment name.
4. Automatically insert the position; First Place, Second Place or Third Place.
5. Automatically insert the percentages of votes formatted as a percentage to one decimal place.

- (a) Create a **single** query that will find the three acts that received the most votes in the final round.

The query should display the ActName and EstablishmentName for each act.

Screenprint the query in **DESIGN** view.

Ensure that the method of finding the top three acts can be seen in full.

(3)

- (b) Create a single database report using the design. Generated numbers must be used in all calculations.

(10)

- (c) Ensure that each certificate will print on a new page in landscape orientation.

(3)

Screenprint the report in **DESIGN** view.

Print the database report.

**Evidence to be submitted for Activity 5**

- 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 = 16 marks)**

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

You need to evaluate these aspects of the prototype you have produced and to recommend improvements and extensions.

- Teacher registration
  - How well your prototype meets the criteria identified in Activity 3(a).
- Managing rounds
  - How user friendly the prototype is.
  - How the process could be improved.
- Printing certificates
  - How the design provided in Activity 5 helped you, as the database programmer, to create the report.
- Recommendations for further functionality
  - Additional functionality you would recommend for the final system.

Produce a report that contains your evaluation of the prototype and recommendations for the final system.

The Quality of your Written Communication (QWC) will be assessed in this question.

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**(Total for Activity 6 = 12 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.**

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**(Standard Ways of Working = 2 marks)**

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**TOTAL FOR PAPER = 90 MARKS**

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