

Pearson Edexcel
International Advanced Level

**Applied Information and
Communication Technology**
International Advanced Level
Unit 4: Using Database Software

7 - 25 May 2018

Assessment Window: 3 weeks

Time: 10 hours

Paper Reference

WIT04/01

You must have:

Cover sheet, short treasury tag,
MobileBeauty_exam.txt

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 with your spelling, punctuation and grammar, as well as the clarity of expression, on these questions.

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

Becca's Beauty Business

Becca Richards owns a beauty business which involves her visiting clients in their home.

Clients can telephone Becca to make an appointment. They specify the date, time and treatment(s) required. Alternatively, clients can make appointments whilst Becca is at their house.

Becca needs 20 minutes to travel between appointments.

Currently, Becca uses a paper-based diary. However, she realises this is not very efficient or accurate. It has been agreed that you will design and build a prototype relational database system.

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

Possible tasks are:

- registering clients
- managing appointments
- adding treatments
- archiving appointments
- printing sales information.

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 mins)

(a) A good database will minimise data entry wherever possible.

Part of the task for managing appointments is given in this table.

Use word processing software to create a copy of this table.

Step	Input	Process	Output
Check availability			
Select client			
Display availability message			
Get date			
Get start time			
Generate end time			
Select treatments			
Generate total duration			

For each step in the task, identify whether it is an input to the system, a process automatically carried out by the system, or an output from the system by adding a cross in the appropriate cell.

(3)

Use word processing software to answer these questions.

(b) Give **three** reasons why a user-friendly interface is desirable.

(3)

(c) Give **two** reasons why third normal form is important.

(2)

Evidence to be submitted for Activity 1.

On **one** side of A4:

- your completed table for part (a)
- your word processed answers for part (b) and part (c).

(Total for Activity 1 = 8 marks)

Activity 2 – Structure (suggested time 2 hours)

You will need to use the data file **MobileBeauty_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.

(7)

- (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) An efficient database must include suitable validation.

Note: you can use the same field more than once if appropriate. In (i) to (iii) you **MUST** name the type of validation used.

- (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 **Presence Check** on an appropriate field. Ensure you can clearly see the field it is applied to.

(1)

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

(1)

- (d) 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.)

(5)

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

(Total for Activity 2 = 18 marks)

Activity 3 – Dealing with registering clients and making appointments (suggested time 4 hours)

(a) A form is required that will allow Becca to register a new client.

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

For each client the form should collect their:

- name
- address
- mobile telephone number.

(1)

(ii) A ClientID is a number one higher than the number currently used. Generate the ClientID.

Screenprint the form in **DESIGN** view.

It does not need any annotations.

Ensure you show how the ClientID is generated.

(1)

(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 client record is required.

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

The automated method of saving should ensure the presence of the client's:

- name
- address
- mobile telephone number.

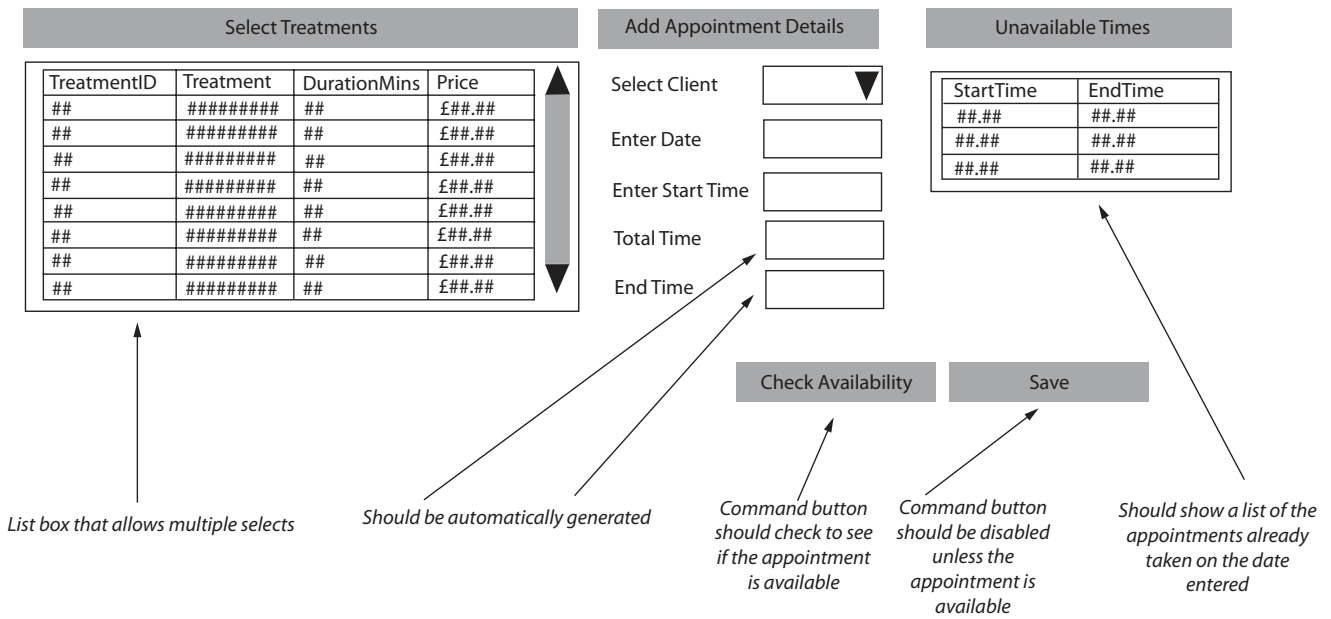
Screenprint in **DESIGN** view any macros, code and/or queries you have used.

Ensure all the details can be seen in full.

(2)

(c) A form is required so that Becca can make appointments.

The design has been provided for you.



(i) Create the form as shown.

Screenprint the form in **DESIGN** view.

Screenprint the form in **FORM** view.

Ensure you show:

- how the end time and total time were disabled
- how the treatment list box allows multi-select
- the source of the treatment list box
- the source of the unavailable times section.

No annotations are needed.

(7)

(ii) The form is completed by selecting the required treatment(s) and client, and entering the date and start time. The form should automatically update to show the:

- unavailable times for that date
- total time
- end time.

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

Ensure all the details can be seen in full.

(6)

(iii) An automated method of checking whether the appointment is available is required when the user clicks the **Check Availability** button.

Create an automated method of checking the availability.

This should:

- take into account the 20 minutes travel time between appointments
- display an error message if the appointment is not available
- enable the save button if the appointment is available.

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

Ensure all the details can be seen in full.

(7)

(iv) An automated method of saving an appointment is required when the user clicks the **Save** button.

Create an automated method of saving the appointment.

This should:

- generate the AppointmentID
- automatically add the appointment and treatment details to the relevant table(s)
- display a message so that the user knows the appointment has been saved.

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

Ensure all the details can be seen in full.

(4)

(Total for Activity 3 = 29 marks)

Activity 4 – Testing (suggested time 1 hour)

(a) Test your automated method of saving this new client's details using the relevant form you created in Activity 3.

First name: Sian
Last name: Kirvan
Street: 12 The Grove
Postcode: BB1 1BB
Mobile Telephone: 11112222222

Produce screen prints of the:

- completed form in **FORM** view and the message that appears
- details of any new record(s) created.

(2)

(b) Test your automated method of saving this new client's details using the relevant form you created in Activity 3.

First name: Suzanne
Last name: Chaplin
Street: 129 Hill View Crescent
Postcode: RY1 9QT

Produce screen prints of the:

- completed form in **FORM** view and the message that appears
- details of any new record(s) created.

(1)

(c) Use the appointment form you created in Activity 3.

(i) Select treatments: 1 and 7
Select ClientID: 14
Enter the Date: 18/02/2018
Enter Start Time: 17:20

Produce a screen print of the completed form in **FORM** view.

(1)

(ii) Click the **Check Availability** button.

Produce a screen print of the message that appears.

(3)

(iii) Click the **Save** button.

Produce a screen print of the relevant table(s) showing the new record(s).

(2)

(d) Using the appointment form you created in Activity 3,

(i) Select treatment: 2

Select ClientID: 3

Enter Date: 16/02/2018

Enter Start Time: 18:40

Produce a screen print of the completed form in **FORM** view.

(1)

(ii) Click the **Check Availability** button.

Produce a screen print of the message that appears.

(1)

(Total for Activity 4 = 11 marks)

Activity 5 – Printing sales (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.)

Becca wants to print a report showing the total treatments and total sales values for each category between 01/01/2018 and 31/01/2018. It should also generate the overall sales value for that period. A design has been provided.

Total Sales between 01/01/2018 and 31/01/2018

Category	Total Treatments	Total Sales
#####	###	£##.##
#####	###	£##.##
#####	###	£##.##
#####	###	£##.##
#####	###	£##.##
#####	###	£##.##
Overall Sales	£###.##	

Create a single database report using the design given.

Screenprint the report in **DESIGN** view.

Print the database report.

Evidence to be submitted for Activity 5.

- A screen print of any queries used 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 these aspects of the prototype you have produced.

- The client registration form
 - How user friendly the form you created is
- The make appointment form
 - How well the design given in Activity 3 helped you, as the database programmer, to create the form
 - How you would have approached the task if the design had not been provided
- The sales report
 - How well the sales report you created in Activity 5 helps Becca plan for the future
 - How it could be improved

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

(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.

(Standard Ways of Working = 2 marks)

TOTAL FOR PAPER = 90 MARKS