Edexcel GCE

Applied Information and Communication Technology

Unit 7: Using Database Software

4–22 May 2009

Assessment window 3 weeks

Time: 10 hours

Materials required for examination	Items included with question papers
Short treasury tag	Cover sheet
booking_exam.txt	
customer_exam.txt	
logo_exam.jpg	

Instructions to Candidates

Complete your candidate details on the cover sheet provided.
At the end of each session you should hand your materials in to your teacher.
All tasks 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 for Candidates

There are **five** activities in this examination totalling **88** marks. **2** further marks are allocated to
Standard Ways of Working giving a paper total of **90** marks.
Use relational database software to carry out the activities in this examination.
The marks for parts of the activities are shown in round brackets: e.g. **(10)**.
There are suggested timings against each activity: e.g. **(1 hour)**.

Advice to Candidates

Study all the information provided carefully.
Work through the activities in order.
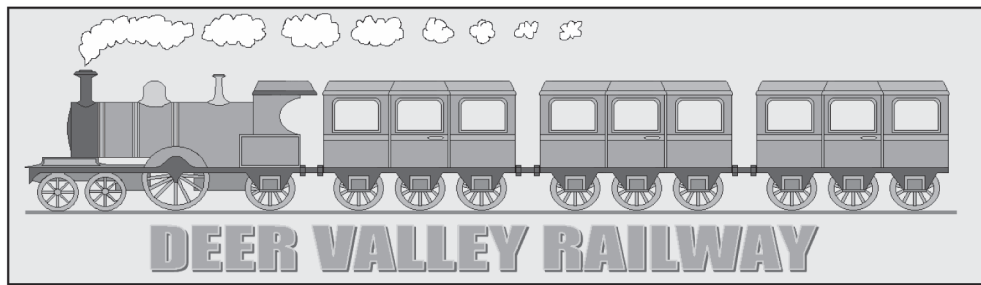Attempt **ALL** activities.
Label your printouts clearly.

Turn over

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In the 1960s the government owned the entire rail network. At that time there was a movement of both passengers and freight away from rail and onto the road, which made some routes unprofitable. As a result a large number of railway lines were closed. The closures were mainly branch lines through rural areas where the number of passengers could not justify keeping the stations on those lines open.

A number of these disused lines were bought by groups of steam train enthusiasts who restored the lines. They bought and restored old steam engines and passenger carriages and ran the lines as tourist attractions. One of these lines runs through the Surrey countryside and is known as the "Deer Valley Railway" because of the number of deer which can be seen around the area. The first line was opened in 1974 and was called the Daffodil line. A large number of volunteers ensured that the track was in good order, drove the trains, sold tickets and maintained the station buildings. By 1979 two other lines, the Tulip and Hyacinth lines, had opened. The Deer Valley Railway has been running as a very successful tourist attraction ever since.

Having opened the new lines, the company decided that it wanted to hold a promotional event to advertise the new services and it came up with the idea of the "Deer Valley Experience". The company proposed that three special trains a day will run on the Tulip Line on the 2nd and 3rd of July. The trains will stop at places of interest where guided tours will take place and a gourmet meal, cooked by a celebrity chef, will be served in the restaurant at Prestwell station.

The company wishes to use its website to advertise and to take bookings for the "Deer Valley Experience". A database is required which allows users of the website to book seats on these special trains. You have been asked to produce this database.

Important note: It is not necessary to produce a transactional website in the examination. When designing and building the database use the standard forms provided by your database management system.
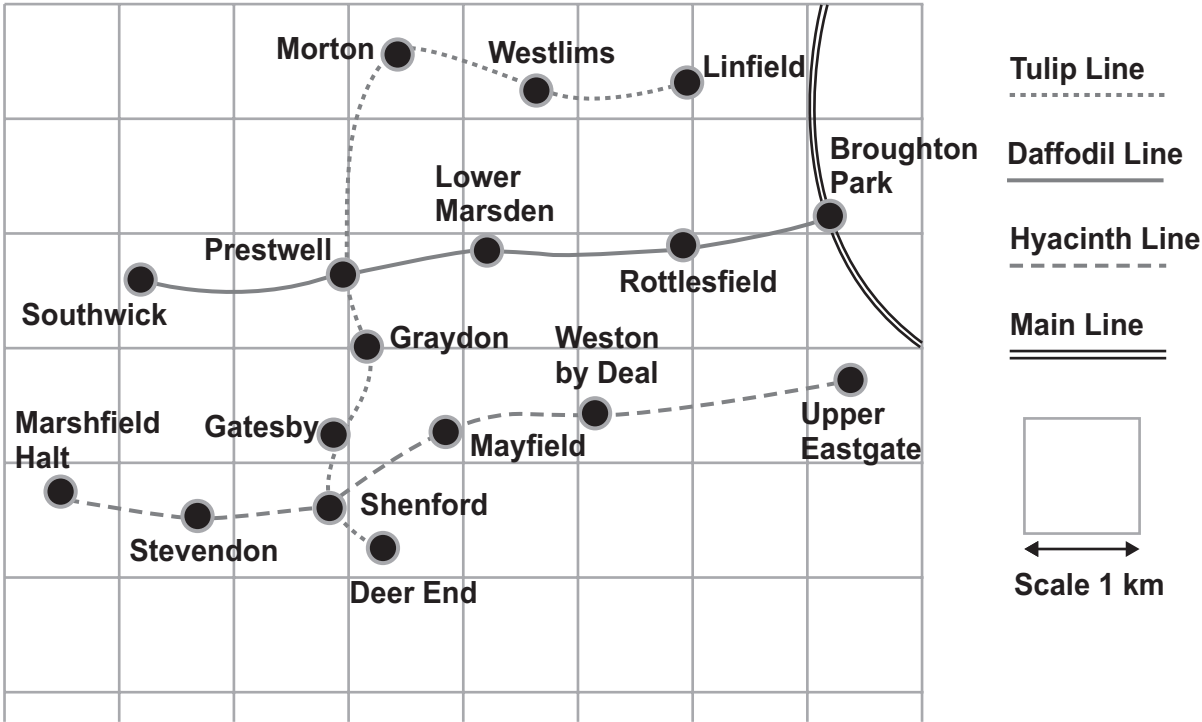
In total there will be six special trains, three on each day. The trains will leave from Linfield station at 09:00, 11:30 and 13:00. Each train will be made up of an engine and four identical 32-seater carriages labelled A, B, C and D. Each carriage has eight sections, four on either side of an aisle. Each section contains two pairs of seats, one pair facing forwards and one pair facing back. Each pair of seats has a window seat and an aisle seat. Individual seats will have a code which consists of the carriage label (A, B, C or D) followed by a two digit number.

The company wants a system that will allow customers to go to an introductory form where they must enter the date and time they wish to go on the "Deer Valley Experience". On the same form they must also enter whether they want to face forward or backwards and whether they want a window or an aisle seat. The system will then take the customer to another screen, the customer form, where they must enter their personal details and choose a seat from the available seats, displayed in a drop-down box, which fit the criteria they entered on the introductory form.

The customer must enter at least their last name, the first line of their address and their post code. There will be the option on this form to confirm or cancel the booking. If the cancel button is pressed then nothing is stored. If the confirm button is pressed then the customer is assigned a unique identification (Customer ID), which consists of the first three characters of their last name followed by a four digit number. The customer's data is then saved and the seat is reserved by linking their identification to the relevant seat booking and the system is updated. If a seat is still available then it will contain the word "Free" instead of a Customer ID.

At a later time the tickets are printed out and sent to the customers. On the day the trains will run, cards are printed out containing the seat number and the customer's identification. These will be placed in a holder on the top of the seat to show the customers where they should sit.

Map of the Deer Valley Railway

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.

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

Activity 1 – Understanding the problem (suggested time 1 hour)

Draw a diagram showing what the system will do and the order in which it will do it.

This diagram should include:

• What data the customer will have to input.

• What decisions have to be made.

• What information will be output or stored.

Evidence to be submitted

❑ flowchart or similar diagram.

(Total 12 marks)

Activity 2 – Structure (suggested time 2.5 hours)

Study the following data files which are provided in your examination work area:

booking_exam.txt
customer_exam.txt

• Use data modelling techniques to design and implement an efficient database structure that minimises duplication of data.

(10)

• Use a range of validation checks and input masks to ensure correct input of data.

(8)

• Load the existing data from the data files into your database.

(4)

Evidence to be submitted (in this order)

❑ a screen print showing the relationships in your database

❑ a screen print showing each table structure with data types

❑ evidence of any validation checks and input masks applied

❑ screen prints of the tables after import, showing the number of records and at least five records. (If the number of fields are too big to fit on one page, all the fields do not have to be displayed.)

(Total 22 marks)

Activity 3 – Creating the Ticket Booking Interface (suggested time 4 hours)

- Create the introductory form.

(13)

Evidence to be submitted

❑ screen print of the form in **DESIGN** view

❑ screen print of the form in **FORM** view

❑ screen print in **DESIGN** view of any queries or macros you have used within the form

❑ annotations on your screen prints to explain how the form works and how you have simplified data entry for the user.

- Create the customer form.

(12)

Evidence to be submitted

❑ screen print of the form in **DESIGN** view

❑ screen print of the form in **FORM** view

❑ screen print in **DESIGN** view of any queries or macros you have used within the form

❑ annotations on your screen prints to explain how the form works and how you have simplified data entry for the user.

- Describe how the customer is transferred from the introductory form to the customer form.

(2)

Evidence to be submitted

❑ screen print in **DESIGN** view of any queries or macros you have used for the transfer

❑ annotations on your screen prints to explain how the transfer works.

(Total 27 marks)

Activity 4 – Testing (suggested time 1 hour)

Test Data:

Last Name	Wilson
First Name	Matilda
Address Line 1	9 Brighton Manor
Town	Hove
County	Sussex
Post Code	SS0 5CW
Adult/Child	Adult
Date of Trip	2nd July 2009
Time of Trip	09:00
Facing	F
Position	W

Last Name	Doberman
First Name	
Address Line 1	14 Gaston Drive
Town	
County	
Post Code	PT14 9CW
Adult/Child	Child
Date of Trip	2nd July 2009
Time of Trip	09:00
Facing	B
Position	W

Last Name	Masters
First Name	Gordon
Address Line 1	15 Aston Avenue
Town	Grimsby
County	Humberside
Post Code	
Adult/Child	Adult
Date of Trip	2nd July 2009
Time of Trip	09:00
Facing	F
Position	W

Last Name	Dorking
First Name	Anna
Address Line 1	11 Mordon Place
Town	
County	
Post Code	TT5 9BB
Adult/Child	Adult
Date of Trip	2nd July 2009
Time of Trip	09:00
Facing	F
Position	W

- Using the interface you created in Activity 3, enter the Test Data.

(4)

Evidence to be submitted (for each test booking)

❑ a screen print of both forms showing the data entered

❑ screen prints of any messages produced by your system.

- Show the results of your testing.

(8)

Evidence to be submitted

❑ screen print of the customer table showing the records that have been added.

❑ screen print of the booking table showing the records that have been added.

(Total 12 marks)

Activity 5 – Producing tickets (suggested time 1.5 hours)

Note: this activity requires 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.)

The booking data includes a Boolean field that contains 'True' if a ticket has been sent to the customer or 'False' if it hasn't. There is another field that indicates if the seat has been reserved for a Child or an Adult.

•   Create a report to produce the train tickets.

(15)

Print only those tickets which have **not** yet been sent.

The tickets must be printed four to an A4 page and should show

•   the company logo

•   the words "Deer Valley Experience"

•   the train number / ID

•   the carriage label (A, B, C or D)

•   the seat number

•   the date and time of the train the customer is booked on. These data should be in a larger text size

•   If the seat is reserved for a child then 'child' should be printed in a larger text size.

Evidence to be submitted

❑   the report.

(Total 15 marks)

(Standard Ways of Working: 2 marks)

TOTAL FOR PAPER: 90 MARKS

END