

Summer Examinations 2015

CSY102615N

Module Title Databases 1

Level Four

Time Allowed Two hours

Instructions to students:

- Enter your student number **not** your name on all answer books.
 - Answer **all** questions.
 - Question 1 carries 50% of the total marks for this paper, Question 2 carries 20% of the total marks for this paper and Question 3 carries 30% of the total marks for this paper.
 - Begin each question in a separate answer book; label each answer book clearly with the number of the question you are answering.
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No. of Pages	4
No. of Questions	3

Question 1 Case Study

Ticket Faster is an online booking site which allows customers to book tickets for events, shows and artists' performances. The site has been running for several years and has a considerable amount of competition, so to improve its popularity it includes added extras such as news, updates and reviews.

The site stores details about various performance artists that the customers might be interested in such as the artist's name, gender, date of birth, latest work. Artists are associated to an artist category, for example comedians are linked to comedy etc. Each category has a code, a title and a description and most categories have several artists, although some are not populated yet.

Artists on the system may perform at many different events but an event could be anything, like a show or musical, unrelated to an artist. All events have an id, a name and description. Other details such as start time and duration are also recorded. As with artist, each event falls under an event category with a code, name and type such as 'concerts', 'family' or 'charity'. Event categories are separate from artist categories as they record different information. As part of the site's added extras, an event category may have many news stories released about it, things like 'comedy in the city' or 'increased popularity of musicals', to develop interest in the events. Event news has an id, title, author and date.

Events are held at a specific venue. Venues have a name, address, lead contact and general facilities are recorded such as seating capacity, bar, disabled access etc. Most venues have a star rating based on their facilities and support. Ratings are stored with a number, e.g. 1-5, a level and a description.

Many tickets are sold for each event. Tickets include a number, type; such as standard or VIP and a price. Each ticket is for one event only. Customers have to register on the system before they can reserve tickets. They must add standard information including name, address, email, and contact number. A customer can buy many tickets for an event though a ticket is for one event and one customer.

After the events, customers may write a review for every event they attend. Each event may have reviews from all the customers who attend.

**End of Case Study
Questions follow overleaf**

Answer **all** questions.

Question 1

- a. You are required to identify the entities from the scenario and produce an entity relationship model. State clearly any assumption you make and resolve any many to many and one to one relationships. **(30 marks)**

- b. For each entity in your model describe the table specification. Include primary keys, foreign keys and other attributes. **(20 marks)**

Total: 50 marks

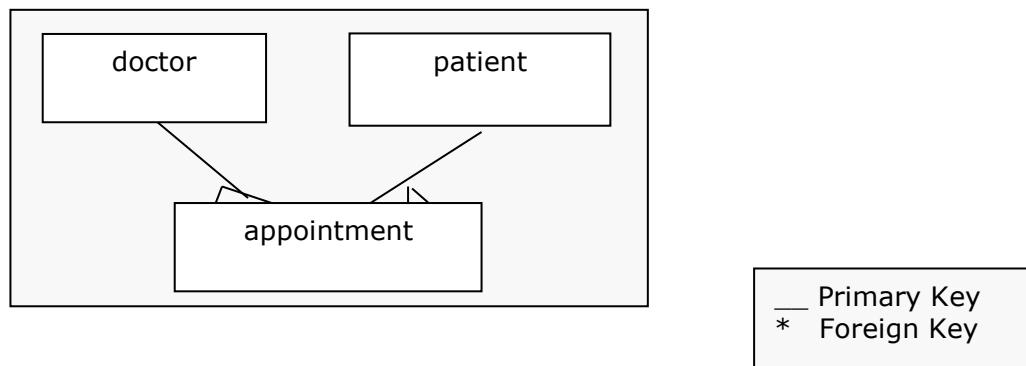
Question 2

Integrity is a fundamental principle of database theory and development and the underlying concept in database definition and manipulation. Clearly define the different types of database integrity and use examples from **your model in question 1**, to support your explanation.

(20 marks)

Question 3

Below is an extract from an entity relationship model together with attribute list. A skeleton **appointments** table is provided with keys, required defaults and constraints.



Tables:

doctors (licence number, firstname, surname, contact no)

patients (nhs number, firstname, surname, date of birth, gender, mobile)

appointments (*licence number, *nhs number, app date, type, duration)

(appointment table and associated questions are on page 4).

appointment Table

ATTRIBUTES	KEYS	DEFAULTS
<u>Licence no</u>	PK, FK	
<u>NHS number</u>	PK, FK	
date		
type		DEFAULT 'check up'
duration		

Note: There are errors and poor practice in this table!

Write the SQL commands to execute the following based on the **appointments** table (**above**).

- a. Create the table with appropriate datatypes and default. **(12 marks)**
- b. Using the ALTER command amend the table to set a primary key. **(4 marks)**
- c. Using the ALTER command amend the table to set 1 foreign key. **(4 marks)**
- d. Assuming the above foreign key constraint was correct and entered in to Oracle. The following error was generated:

ERROR at line 4:**ORA-02270: no matching unique or primary key for this column-list**

Explain what you understand by this error message using a diagram to illustrate your answer if appropriate.

(5 marks)

- e. Highlight the syntax errors in the following INSERT statement and briefly explain why they would cause a problem.

```
INSERT INTO patient  
(NHS no, name, surname, date, gender)  
VALUES (2000, TOM,'THOMAS','01-JAN-1970','01601 735500', 'M');
```

(5 marks)**Total: 30 marks**

End of Paper
