

Higher Information Systems

2006 q.15 Relational Databases Entity Relationships E/R Diagrams

Douglas Car Rental uses a relational database. The data is held in the following tables.

- a. Draw an entity relationship diagram to represent this data model. **(6)**
- b. Each month a report is produced to show the rental income from each car. The report for car registration WZ51 ABC is shown below.
 - (i). Name the tables and fields which would be used to produce this report **(5)**
 - (ii). State **two** features of the RDBMS which would be used to calculate the monthly total from the income. **(2)**

Car	Customer	Rental	Charge
<u>Car registration</u>	<u>Customer number</u>	<u>Customer number*</u>	<u>Category</u>
Make	Customer name	<u>Car registration*</u>	Price per day
Model	Customer address	<u>Date rented</u>	
Category*		Number of days rented	

Date	Days	Income
1/10/05	4	£79.96
6/10/05	7	£139.93
15/10/05	2	£39.98
17/10/05	3	£59.97
29/10/05	1	£19.99
	Total	£339.83

2006 q.7 Relational Databases Entity Relationships Cardinality

State the *cardinality* of each of the following relationships.

- a. Vehicle and vehicle Registration Number. **(1)**
- b. Pupil and SQA Candidate Number. **(1)**

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2007 14a Relational Databases Entity Relationships E/R Diagrams

Strathcraig Holidays is a firm of travel agents. It has set up a booking system using a relational database. The data is held in the tables below.

Draw an entity relationship diagram to represent this data model. **(6)**

Customer	Holiday	Hotel	Booking
<u>Customer ID</u>	<u>Holiday ID</u>	<u>Hotel ID</u>	<u>Customer ID*</u>
Customer name	Duration (nights)	Hotel name	<u>Holiday ID*</u>
Customer address	Date	Hotel address	
Customer phone	Price		
	All inclusive		
	Hotel ID*		

2007P q.2 Relational Databases Entity Relationships Cardinality

State the cardinality of each of the following.

a. Book and ISBN **(1)**

b. Pupil and school subject. **(1)**

2008 04 Relational Databases Entity Relationships Cardinality

State the cardinality of each of the following relationships.

a. Recording Artist and MP3 playlist **(1)**

b. Hospital Ward and Patient **(1)**

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2008P q.15 Relational Databases Entity Relationships

Inverdon Community College stores data in a relational database. The data is stored in the following tables.

Students may enrol in as many classes as they wish. Classes are held at a time which is Morning, Afternoon or Evening.

a. Draw an entity relationship diagram to represent this data model. **(6)**

b. State a suitable data type for each of the following attributes.

(i). Cost (ii). Venue **(2)**

c. State a suitable validation check for each of the following attributes;

(i). Student No in Enrolment table (ii). Tutor No in Tutor table (iii). Cost **(3)**

d. The RDBMS is used to produce class lists as shown below.

State **two** features of the RDBMS which would be used to produce a class list with Number of Students. **(2)**

Student	Class	Enrolment	Tutor
Student No	Class	Class*	Tutor No
Student Name	Day	Student No*	Tutor Name
Student Address	Time	Paid	Tutor telephone
Student Telephone	Cost		
	Venue		
	Tutor No*		

Class: Scottish drama
Tutor Gail Girdwood

Colin Harris
Andrew James

...

...

Hayley Lowdon
Yasmin Chu

Number of Students: 14

2008P q.6 Relational Databases Entity Relationships Cardinality

State the *cardinality* of the following relationship:

Postcode and House **(1)**

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2009 05 Relational Databases Entity Relationships Cardinality

State the cardinality of each of the relationships:

- Zoo and Animal **(1)**
- Teacher and Pupil **(2)**

2009 14a Relational Databases Entity Relationships E/R Diagrams

Pets & Vets is a veterinary centre for the treatment of sick pets. It has set up a relational database to store details of treatments. The data is held in the entities below.

Draw an *entity relationship diagram* to represent this data model.

Pet	Owner	Treatment	Vet
<u>Pet ID</u>	<u>Owner ID</u>	<u>Date</u>	<u>Vet ID</u>
Pet name	Owner name	<u>Pet ID*</u>	Vet name
Type	Owner address	<u>Vet ID*</u>	Phone extension
Date of birth	Owner phone	Description	
Gender		Treatment room	
Photo		Cost	
Owner ID*			
Insurance			

2009P q.16 Relational Databases Entity Relationships E/R Diagrams

Steenhive High School Library uses a relational database. The data is held in the tables below.

- Draw an entity relationship diagram to represent this data model. **(6)**

Book	Loan	Author	Pupil
<u>ISBN</u>	<u>Loan ID</u>	<u>Author name</u>	<u>Pupil ID</u>
Title	ISBN *	Nationality	Pupil name
Author name *	Pupil ID *		Class
Category	Date of loan		Times overdue
Publisher	Number of days		Amount of fines overdue
Cost of book	Overdue (y/n)		
Number of copies			

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2010 q.14 Relational Databases Entity Relationships E/R Diagrams

Teachers at Northcraig High School organise several trips throughout the year. Teachers may organise more than one trip in a year and pupils may book more than one trip. A relational database has been set up to record pupil payments. The entities and attributes are as follows:

PUPIL(Pupil ID, Name, Form class*)

TRIP(Trip ID, Trip Leader, Destination, Date, Cost)

PAYMENT(Pupil ID*, Trip ID*, Payment date, Amount)

FORM CLASS(Form class, Form teacher)

a. Draw an *entity relationship diagram* to represent this data model. **(6)**

2010 q.5b Relational Databases Entity Relationships Cardinality

Entities exist for Customer, Order and Item. State the cardinality of each of the following relationships.

(i) Customer and Order **(1)**

(ii) Item and Order **(1)**