

# 1. Highland Holidays

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## Question

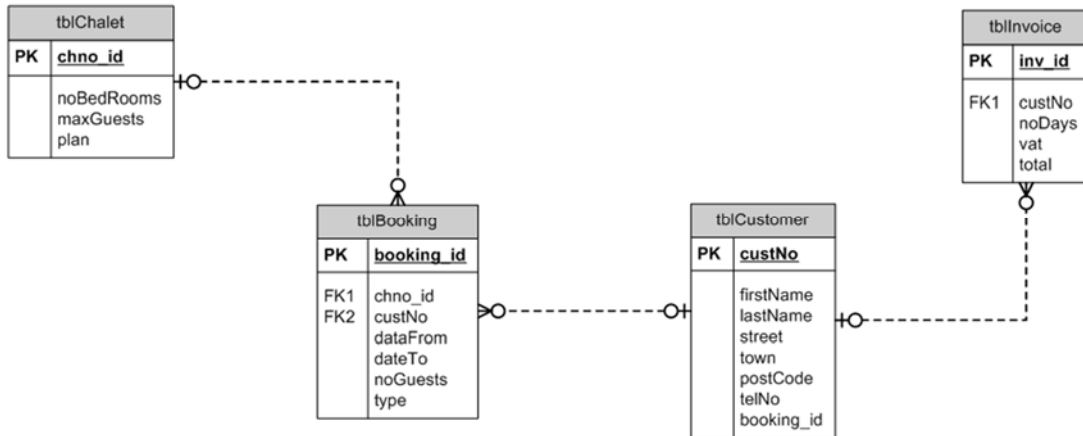
Highland Holidays rent out holiday chalets. They need a system that will produce invoices for their customers, showing which chalet has been booked and for how long, and thus the amount of money owed.

Design a database that includes this and perhaps some other relevant data, organised into tables.

Sketch out the tables needed, and the fields to be included in each. Show how the tables are related.

Note any assumptions or simplifications you agree on.

## Model Answer



## 2. Shellfish Species Survey

### Question

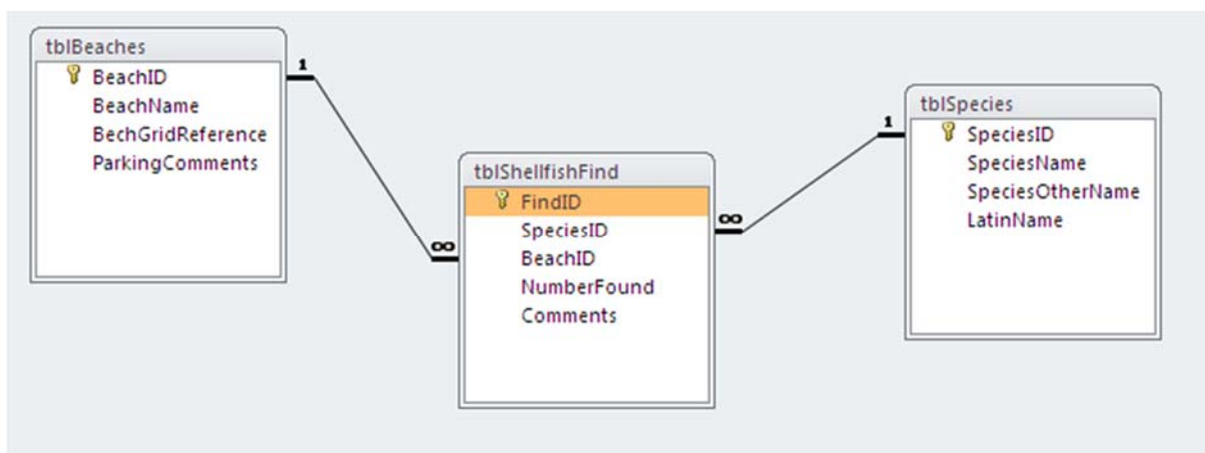
A zoologist visits 10 different beaches, looking for 35 species of shellfish. On each visit, he records how many of each species he finds at each beach.

Can you suggest a better structure than that shown?

Name your tables and fields and show how they are related.

	DateMeasured	BeachName	SpeciesName	CountOfSpecies
▶	12/08/2003	Five Mile	Turanicus Rond	28
	12/08/2003	Five Mile	Saurosa B.	65
	12/08/2003	Five Mile	Saurosa Majori	25
	17/08/2003	Five Mile	G. Japonica	43
	17/08/2003	Five Mile	G. Diabocatus	72
	17/08/2003	Five Mile	Saurosa B.	47
	20/08/2003	Five Mile	Turanicus Rond	10
	20/08/2003	Five Mile	Saurosa B.	14
	20/08/2003	Five Mile	Saurosa Majori	15
	12/08/2003	GreyStones	Turanicus Rond	53
	12/08/2003	GreyStones	Saurosa B.	56
	12/08/2003	GreyStones	G. Diabocatus	39
	17/08/2003	GreyStones	Saurosa Majori	31
	17/08/2003	GreyStones	G. Japonica	32
	17/08/2003	GreyStones	G. Diabocatus	7
	20/08/2003	GreyStones	Turanicus Rond	16
	20/08/2003	GreyStones	Saurosa Majori	18
	20/08/2003	GreyStones	G. Diabocatus	20
	12/08/2003	North Tideway	Turanicus Rond	26
	12/08/2003	North Tideway	Saurosa B.	62
	12/08/2003	North Tideway	G. Diabocatus	64
	17/08/2003	North Tideway	Saurosa Majori	61
	17/08/2003	North Tideway	G. Diabocatus	58
	17/08/2003	North Tideway	Turanicus Rond	52
	20/08/2003	North Tideway	Saurosa B.	50
	20/08/2003	North Tideway	Saurosa Majori	44
	20/08/2003	North Tideway	G. Diabocatus	42
	12/08/2003	Beasdale	Turanicus Rond	46
	12/08/2003	Beasdale	Saurosa B.	41
	17/08/2003	Beasdale	Saurosa Majori	40

### Model Answer



### 3. Slater Menswear

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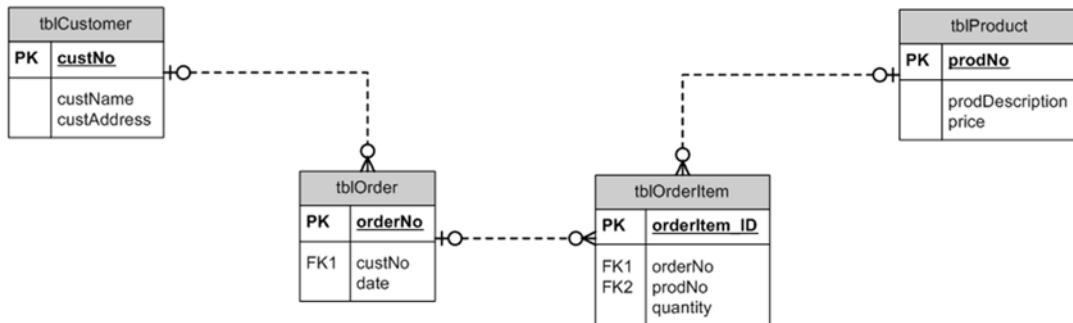
#### Question

The table below shows a sample of data collected by the Menswear Sales department of an independent shop. Provisionally, data has been collected in the form of a spreadsheet.

Analyse the data and produce a data model that can be implemented in a relational database. Break the data down (normalise) into related tables so the information can be managed in a relational database.

OrderNo	Date	CustNo	Name	Address	ProdNo	Desc	Price	Qty
1	05/10/2007	22	Smith	London	A95	Jacket	£ 55.00	4
					G17	Coat	£ 120.00	8
					K10	Suit	£ 90.00	5
2	19/10/2007	47	Jones	Paris	G17	Coat	£ 120.00	9
					D77	Shirt	£ 35.00	20
3	37/10/2007	25	West	Glasgow	E30	Tie	£ 5.00	25
					D77	Shirt	£ 35.00	4

#### Model Answer



## 4. Choir Performance Pieces

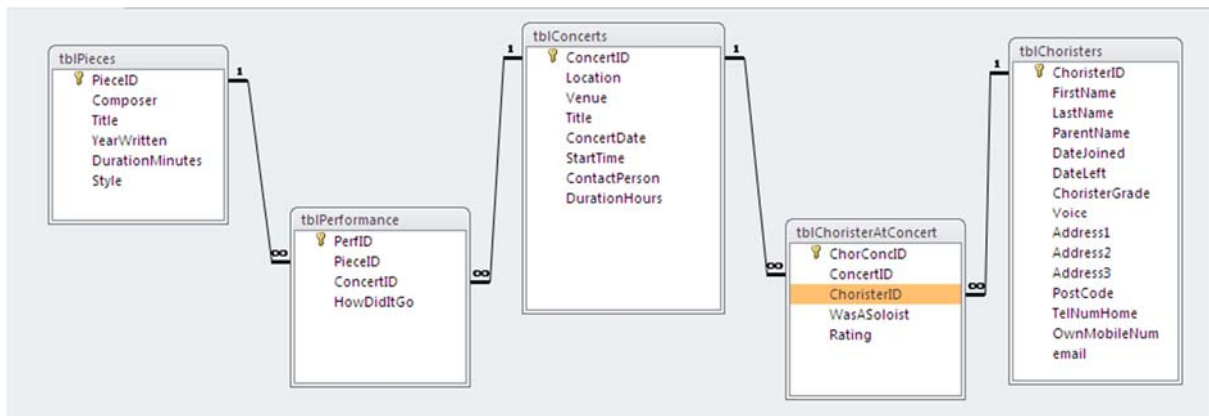
### Question

A choir master is setting up a database of the music his choir performs. For each piece, he needs to know details about the piece itself (title, composer and so on), and where and when it has been performed.

A typical concert consists of around 10 pieces, and some popular pieces are presented repeatedly. He also needs a list of his choristers with their contact information.

Which tables should he set up? Suggest suitable fields. How would the tables be related?

### Model Answer



## 5. Car maintenance

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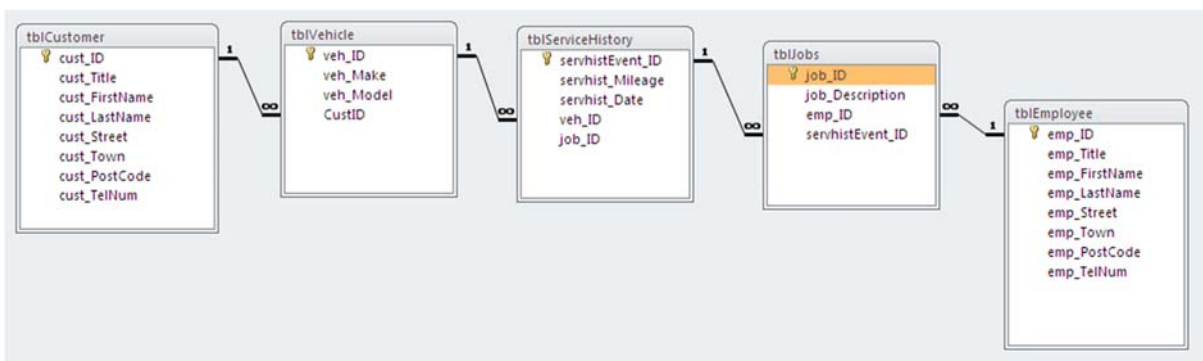
### Question

Design a database to help a car maintenance workshop manage its business.

When a customer brings along a car for repair or service, staff need to check its service history (i.e. the work they have done on this vehicle in the past). They keep a note of every piece of work done on the vehicle, and which member of the team carried out each task.

This database does not manage any costing, pricing or salary information.

### Model Answer



## 6. Castellan Course Admin

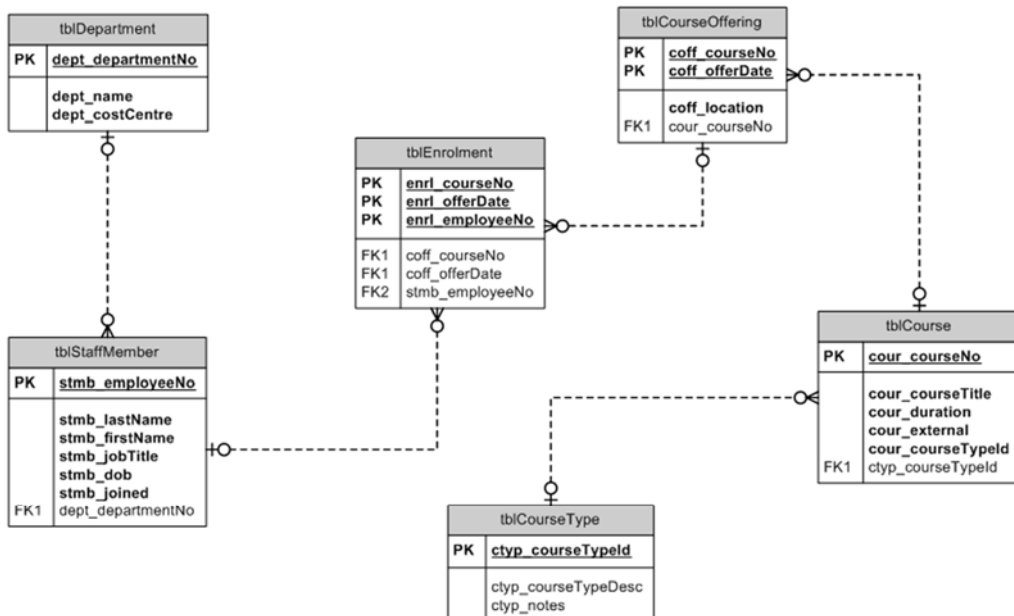
### Question

Castellan Ltd is a large insurance company whose training department runs internal training courses. Courses cover subjects such as employee induction, fire evacuation procedures, health and safety, as well as training in the bespoke computer systems used within the company. In addition, the department is advised staff on external training for general software packages and coordinates bookings for these.

Until now, records have been collected in an Excel spreadsheet. Analyse the present system and produce a data model.

Course Code	Course Title	Start Date	Attendee-1		Attendee-2		Attendee-3		Attendee-4		Attendee-5	
			Name	Dept	Name	Dept	Name	Dept	Name	Dept	Name	Dept
IND1	Staff Induction	27/03/2007	Neil Smith	Accounts								
FIR1	Fire Safety	29/03/2007	Peter Brown	Accounts	Joshua Ndola	IT	H Singh	Admin	Sonia Tonn	HR	Jim and Sue	IT
ACC1	Intro to MS Access	24/04/2007	Jenny Wong	Desktop Services	Peter Brown	Payroll						
IND1	Staff Induction	15/04/2007	H Singh	Admin	Paula Fisher	Payroll						

### Model Answer



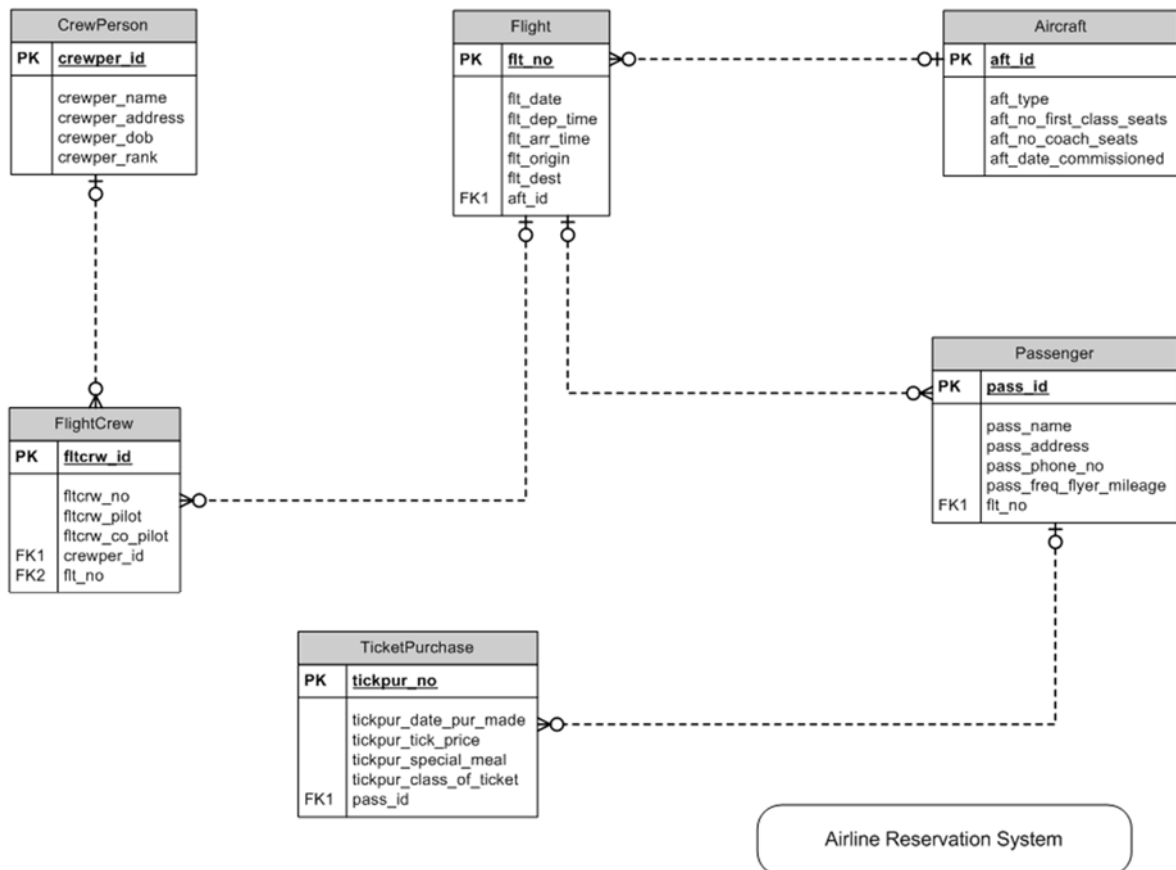
## 7. Airline Reservation System

### Question

An airline needs to improve its reservation system. This should include details of passengers and the tickets they purchase, showing the flight information. Crew are allocated to each flight, drawn from the 60 people employed. The airline owns 6 planes, so indicate which craft is used for each flight.

Study the relationship diagram overleaf: can you work out what each table is for and what each join line means? Consider whether you agree with the way data is organised into tables with relationships. Is anything missing? What would you add or simplify?

### Model Answer



## (extra) Video Hire

### Question

Oxford DVD Rentals is a small company who rent out DVD movies. To rent a DVD, a person has to register and pay a membership fee (£10 for 1 month, £50 for 6 months or £70 for a year).

The maximum duration of a rental is 7 days.

Design a database where the staff can record details of individual members, details of each DVD stocked and who rents each one.

### Model Answer

