Exercises

Produce an Entity Relationship (ER) diagram for the following scenarios:

A specialist travel company wishes to computerise its operations.
Each staff member may handle enquiries by zero or many customers with customers possibly (or possibly not) making an enquiry of different staff members at different times. Details of customer queries are recorded (date of enquiry and enquiry type). An individual staff member may (or may not) create several bookings with an individual booking being created by one and only one staff member. Each customer makes zero or more bookings, with each booking being made by one and only one customer. The booking is associated with one and only one holiday type, with each holiday type associated with zero or many bookings.
Staff details held include staff number (unique), name, salary and grade. Customer details recorded include customer number (unique), name, address and phone number. Booking details include booking number (unique) and booking date. Holiday type details include holiday code (unique), description, and duration.

A company wishes to create a database about the running of training courses for its staff training system.

Each staff member may attend a number of training courses and a training course must involve at least 5 staff members.   A training course is run by either one, two or three trainers and each trainer will run one or more training courses. Each training course is held at just one venue and most (but not all) venues hold several training courses. Every training course involves just one course theme and course themes are involved in just one training course (with some themes recorded for some future allocation to an actual training course).
Staff member details to be recorded include staff number (unique), staff name, department and phone number. Trainer details include trainer code (unique), trainer name and phone number. Training course details include course code (unique), course date and length. Course Theme includes theme number (unique), theme name and theme area. Venue details include venue name (unique), capacity and distance. The outcome for each staff member who attends a particular course (i.e. pass/fail) is also recorded. The role of the trainer on each particular training course (lead, support, administration) is also recorded.

'Well Being' is a medical centre located in Waterford city.

They are required to record data about their doctors including the doctors' identification number, name, address, phone number and their speciality. For each patient, the PPS number, name, address, phone number and initial visit date visited are recorded. A patient will have one or more appointments and an appointment involves one and only one patient. A doctor takes one or more appointments and each appointment is taken by one doctor only. The appointment id, date, cost, and description are recorded on the system. An appointment may generate one prescription and a prescription will be specific to an individual appointment. Information like prescription number and date are required for the system. Each prescription will have one or more medicines prescribed and each medicine may be on zero or more prescriptions. The medicine id, name, and manufacturer are recorded. The dosage details are recorded for each medicine on each prescription.

The EasyDrive School of Motoring has many well-qualified instructors who have an unbeatable record of success in teaching people to drive. Each client is interviewed by an instructor before lessons begin. The instructor interviews many clients discussing an appropriate plan of learning. The date and time of the interview are recorded. Comments are also recorded.

A client may request many lessons and a lesson is requested by one Client. Each lesson belongs to a lessontype. Each lessontype is used by many lessons.

A lesson is with a particular instructor and an instructor teaches many lessons. An instructor uses one and only one car whereas a car may be used by one instructor.

For each instructor, we record an instructor number, their name and qualification. For each client, we record a client number, their name, address, date of birth, telephone number and provisional license number. For each car, we record the registration number, make and model. For each lesson, we record a lesson number, the date and time of the lesson, the route taken, progress made and any comments. For each lesson type, we record the type, the hourly rate and number of lessons.