

## Database Modelling Exercises... Test Time

1. Imagine you work for an insurance company and you have been asked to develop a new relational database for them. The database needs to capture the data described below:
  - The insurance company needs to store customer information (name and address) and information about the cars (make, model, registration date, and registration plate) which appear on the policy which a customer sets up.
  - The policies will need along with an ID number need a start date, finish date and price. Each policy can only have a single car attached to it but may be shared by different customers, although a main driver will always be identified.
  - Details any accidents associated to a policy are also recorded by the database. This will include time/date of the accident, details of the accident and if the policy holders are at fault or not.
  - a) Draw an extended ERD showing the primary keys, foreign keys and any other key attributes to model this situation for the insurance company.
  
2. Imagine you work for Homes4All a new housing association in Coventry, and you have been given the job of keeping track of who is living in the association's developments over time. To help you in this task, you have decided to use a relational database for your record keeping. Your task is to design a database that allows you to capture the data described below:
  - The housing currently has association three public housing developments. For each development you need to store its name, location, the year it opened, and its height in stories.
  - Each housing development has a number of units. For each unit in the development, you want to keep track of the number of bedrooms, the number of bathrooms, whether the unit has a kitchen or living room, and the square footage.
  - The database should keep track of the households living in the units. A single household can only live in one unit at a time, but over time different households can live in different units and unit can have different households.
  - Each household has a lead surname on record so it can be identified but a household has different members. For each member of a household, you want to record their name, date of birth, sex, and indicate whether or not they are the head of the household (more than one person can share that distinction).
  - a) Draw an extended ERD showing the primary keys, foreign keys and any other key attributes to model this situation for the housing agency.